H Series Thermal Printer User's Manual

Model Ht-146

User's Manual No. 980311-001 Rev. A

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TRADEMARKS

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Ht-146 Thermal Printer

CE

European Council Directive		Compliance to Standards	
89/336/EEC	EMC Directive	EN55022-A, CISPR 22	RF Emissions control
92/31/EE	EMC Directive	EN50082-1 IEC801	Immunity to Electromagnetic Disturbances
73/23/EEC	Low Voltage Directive	EN60950 IEC950	Product Safety
	EMC Directive	EN61000-3-2	Harmonic Emissions
	EMC Directive	EN61000-3-3	Voltage Variation

FCC - Declaration Of Conformity:

FC

Model: Ht-146 conforms to the following specification:

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109(a) Class B digital device

Supplemental Information:
This device complies with Part 15 of the FCC Rules. Operation is subject to the following Two Conditions: (1) This device may not cause harmful interference , and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada Notice:

This device complies with Industry Canada ICS-003 class B requirements.

Cet equipement est conforme a l'ICS-003 classe B de la norm Industrielle Canadian

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General Cautions and Warnings

This page describes general safety and maintenance warnings and cautions for the printer and are referenced throughout the manual.

Warning - Shock Hazard

The printer should never be operated in a location where it can get wet. Personal injury could result.

Warning - Static Discharge

The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the print head or electronic components used in this device. DO NOT TOUCH the print head or the electronic components under the print head assembly.

Caution - Printer Setup & Handling

1)When installing or modifying the printer setup or configuration, <u>ALWAYS TURN POWER OFF Before</u>:
A) Connecting any cables.
B) Performing any cleaning or maintenance operations.
C) Moving the printer.
2) Damage to the printer interface connector, accessories or door may result from placing the printer on it's front bezel or backside during unpacking or handling.

Media Warning

Always use high quality approved labels and tags. If adhesive backed labels are used that DO NOT lay flat on the backing liner, the exposed edges may stick to the label guides and rollers inside the printer, causing the label to peel off from the liner and jam the printer.

Media Reload Hint

If you should run out of labels while printing, DO NOT turn the power switch OFF (0) while reloading or data loss may occur. The printer will automatically resume printing when a new label or ribbon roll is loaded.

Print Quality Tip

Print density (darkness) is affected by the heat energy (density setting) applied and by the print speed. Changing both Print Speed and Density may be required to achieve the desired results.

WARRANTY INFORMATION

We Need To Hear From You!

To Establish Your Warranty Period And Provide Access To Technical Support, Send Us Your Product Registration Card Today!

Zebra Technologies Corporation warrants the mechanism, control electronics and power supply, under normal use and service, to be free from defects in material and workmanship for a period of twelve (12) months from the date of purchase by the end user. Zebra Technologies Corporation warrants the print head, under normal use and service, to be free from defects in material and workmanship for a period of ninety (90) days or 30KM of printing (whichever occurs first) from the date of purchase by the end user. Proof of purchase or product registration is required. If proof of purchase or product registration cannot be established, shipment date to the original buyer (dealer or distributor) will be used to establish the warranty period.

Failure to exercise caution to protect the equipment from electrostatic discharge damage, adverse temperature and humidity conditions or physical abuse may void the warranty. Failure to use only Eltron brand approved media may void the warranty. Zebra Technologies Corporation will, at its option, repair or replace the equipment or any parts which are determined to be defective within this warranty period, and which are returned to Zebra Technologies Corporation F.O.B. factory of origin.

The warranty set forth above is exclusive and no other warranty, whether written or oral, is expressed or implied. Zebra Technologies Corporation specifically disclaims the implied warranties of merchantability and fitness for a particular purpose.

RETURN MATERIALS AUTHORIZATION

Before returning any equipment to Zebra for in warranty or out of warranty repair, contact Repair Administration for a Return Materials Authorization (RMA) number. Repack the equipment in the original packing material and mark the RMA number clearly on the outside. Ship the equipment, freight prepaid, to the address listed below:

Eltron RMA, USA
1001 Flynn Road
Camarillo, CA. 93012
Phone: +1 (805) 579-1800
repair@eltron.com

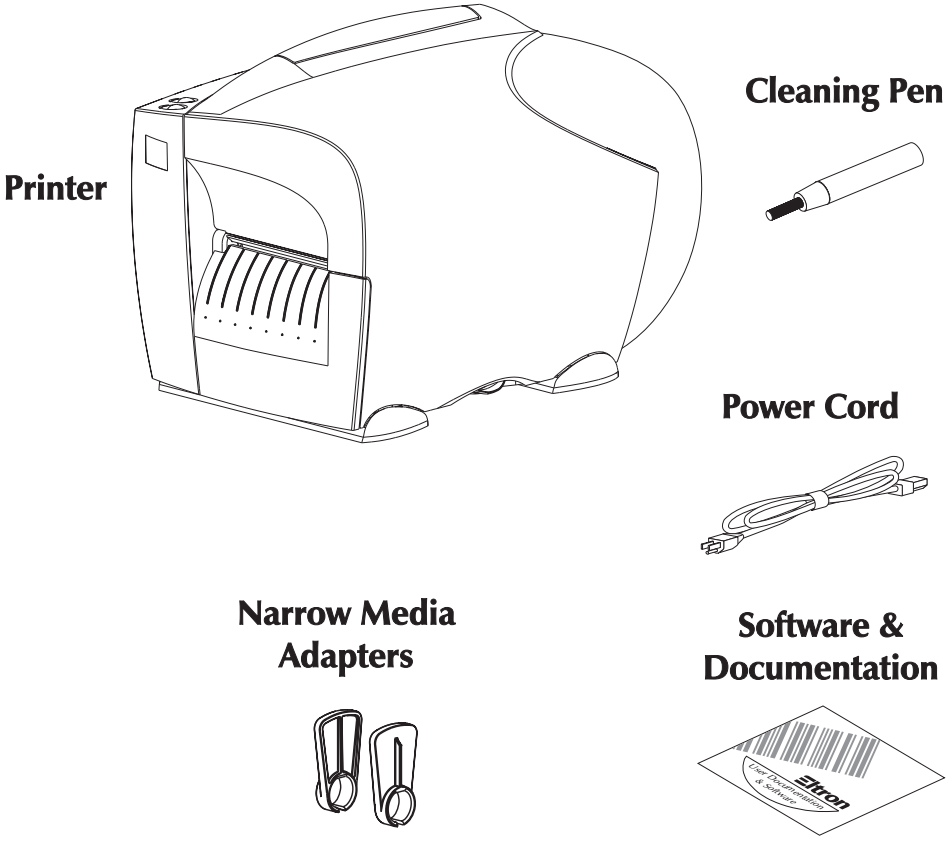
Label Printers:
Zebra Technologies, Europe
Zebra House
The Valley Centre, Gordon Road
High Wycombe
Buckinghamshire HP13 6EQ, UK
Phone: +44 (0) 1494 472872
FAX: +44 (0) 1494 450103

Card Printers:
Zebra Technologies, Europe
Zone Indutrielle, Rue d'Amsterdam
44370 Varades, France
Phone: +33 (0) 240 097 070
FAX: +33 (0) 240 834 745

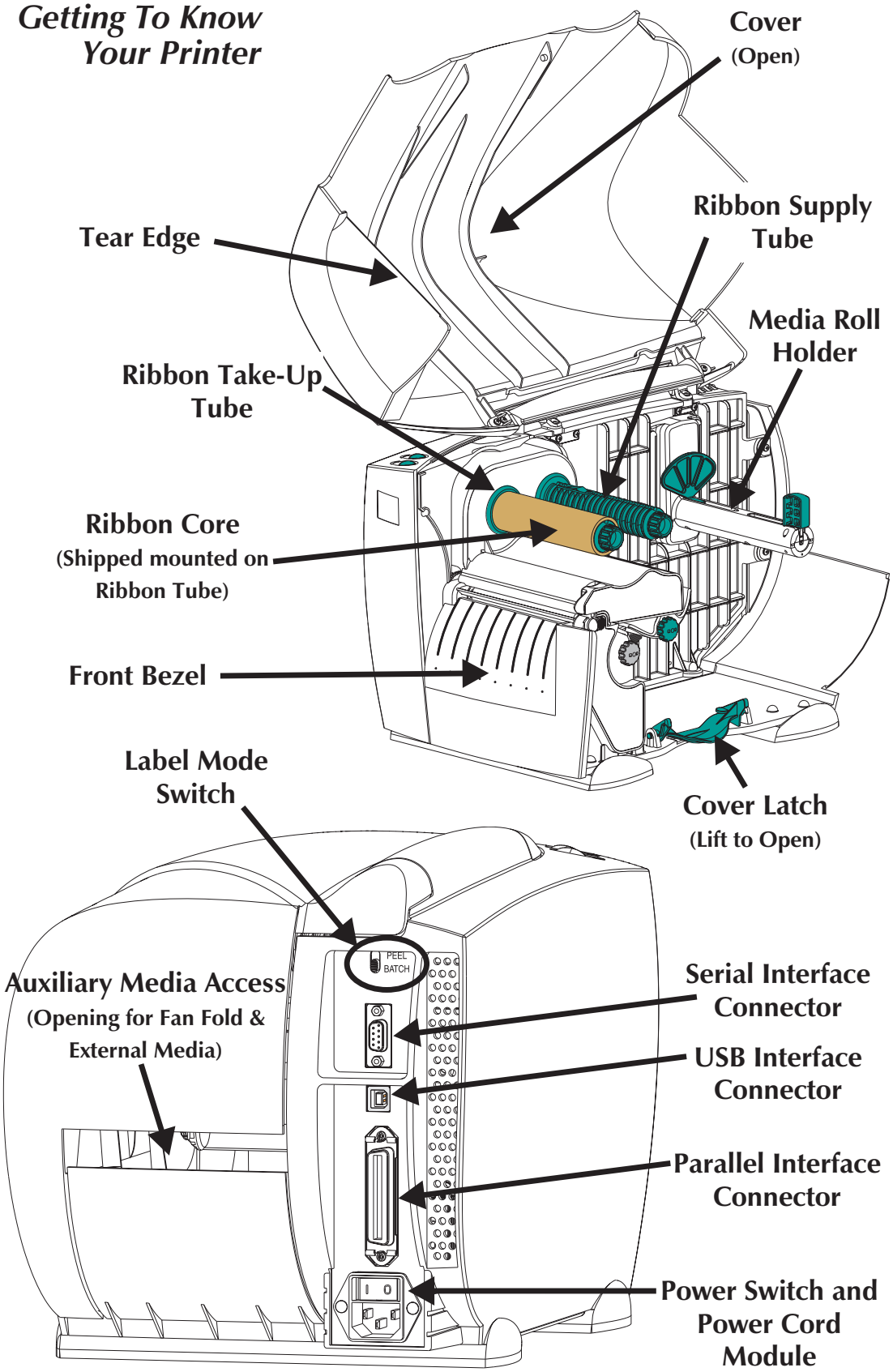
1
Installation & Operation

Unpacking Your Printer

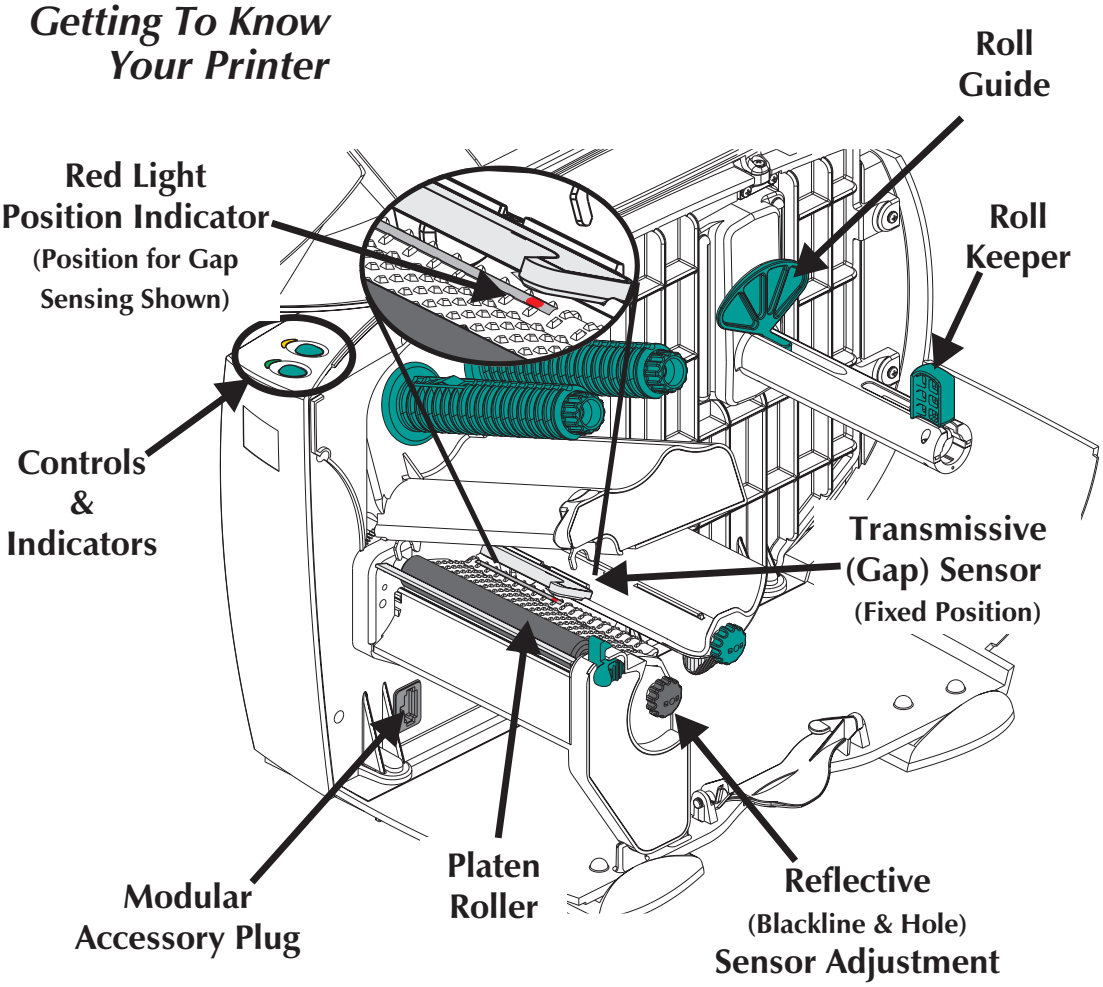
Open the shipping carton and remove the printer and its accessories.

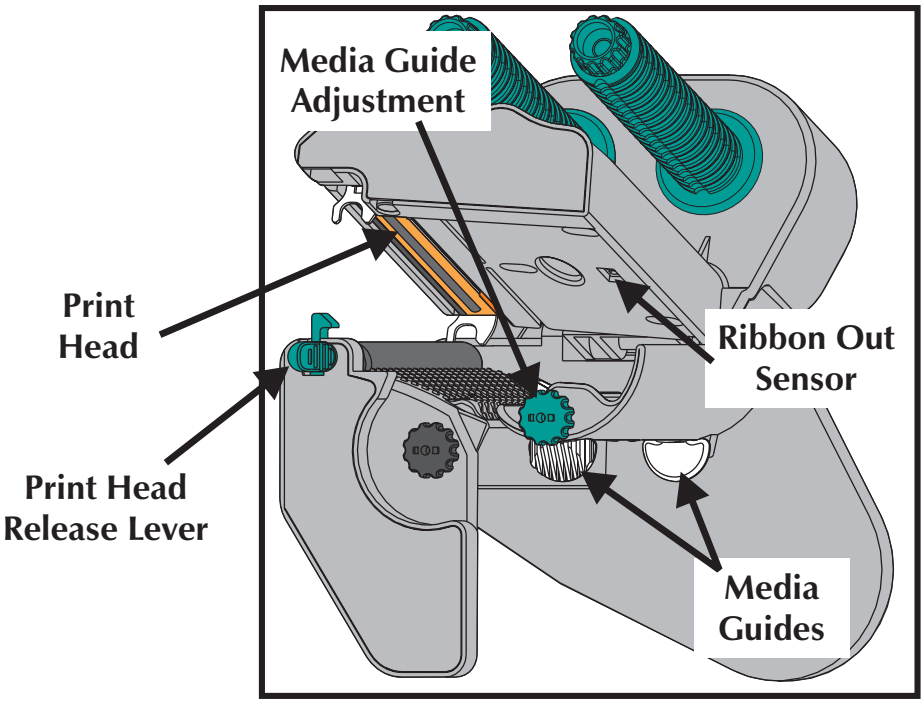


Getting To Know Your Printer



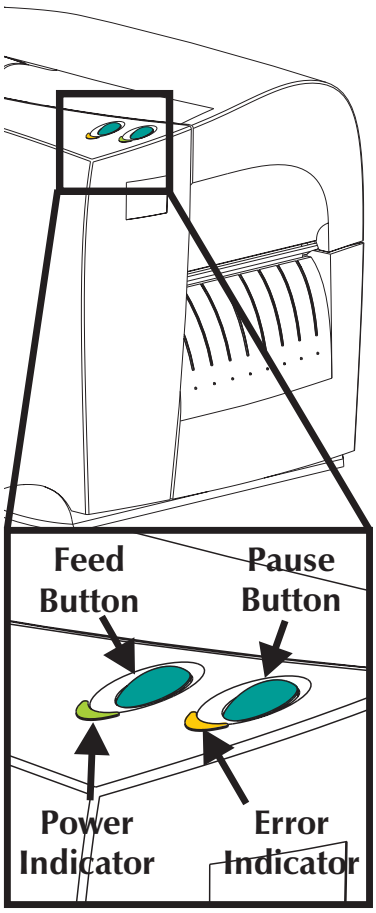
Getting To Know Your Printer





Print Mechanism

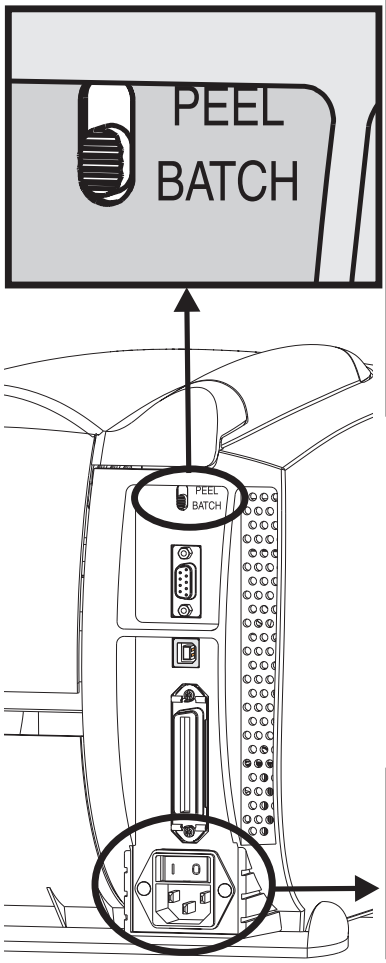
Controls & Indicators



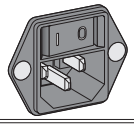
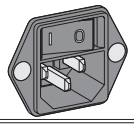
Button	Function
PAUSE	**Press Once** - Halt batch printing.
	Press Second Time - Resume batch printing operation.
FEED	**Press Once** - Feed one label or "form".
	Press & Hold - Feed a single label, stop, feed a single label, stop, and so on until the **FEED** button is released.
PAUSE & FEED	**Press & Hold** a minimum of 3 seconds **to reset the printer.**

Indicator LEDs		Condition Report
POWER (Green)	ERROR (Amber)	
On Solid	OFF	Power On
Flashing	OFF	Pause
OFF	On Solid	Media/Ribbon Out
OFF	On Solid	Hardware Error
OFF	Flashing	Head Open or Rewind Full
On Solid	On Solid	Data/Command Syntax Error

Controls & Indicators



Label Mode Switch	
Mode	**Description**
Batch	Standard operation - Prints one or more labels until the batch form (label) print operation is complete.
Peel with Label Taken Sensor	Print one label and pause. Remove label. Prints next label. Repeats until print operation is completed.
Peel without a Label Taken Sensor	Print one label and pause. Remove label. Press Feed to print next label. Repeat until print operation is completed. (See EPL2 **O** command with **L** parameter).
Note: Reset the printer to initialize the mode change.	

Power Switch			
0 = OFF (8 seconds to power off)		**1 = ON**	

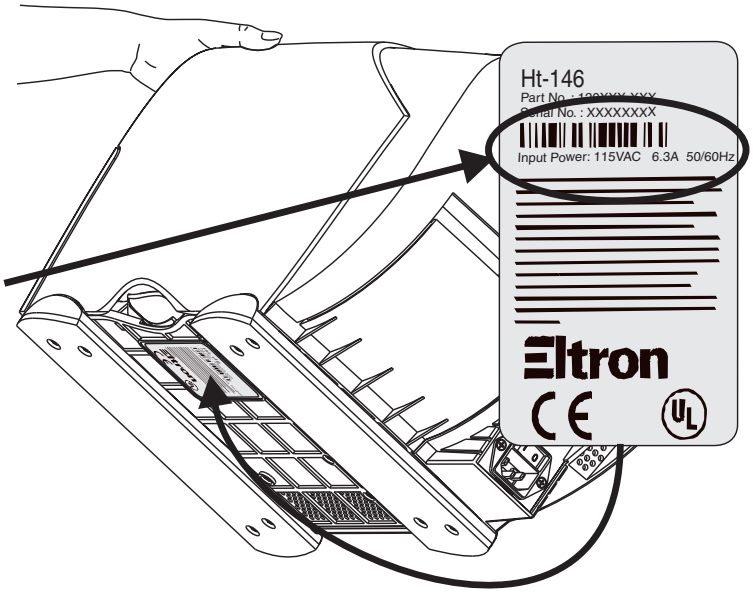
Installation

The following steps will guide you through the installation of the printer.

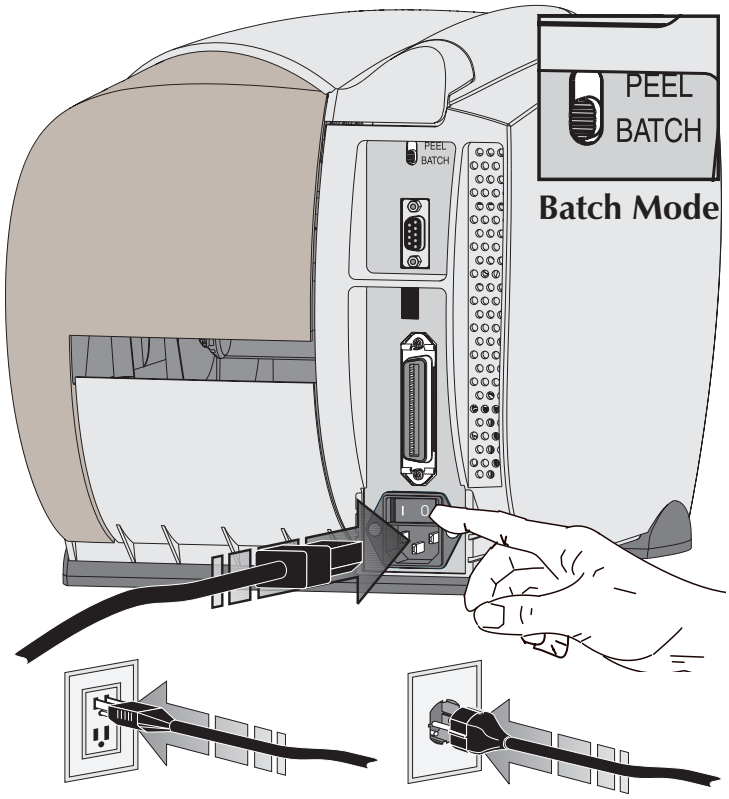
Step ❶ Attach Power

MOVIE

Check Printer Voltage



Set Batch Mode



Set Printer Power OFF

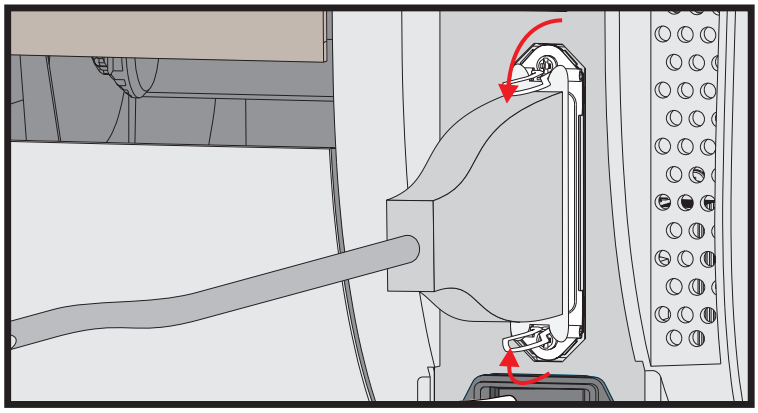
(OFF = 0)

Attach the Power Cord

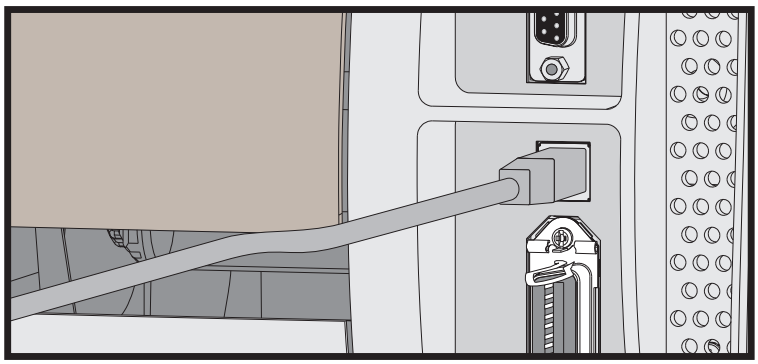
See Warnings - Page v

Step ❷ Attach Interface Cable

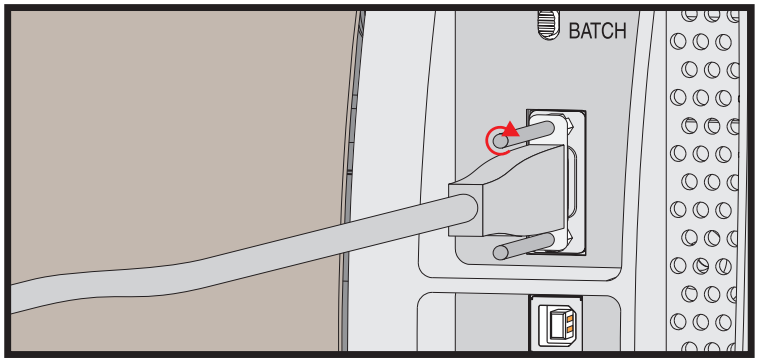
Parallel Interface



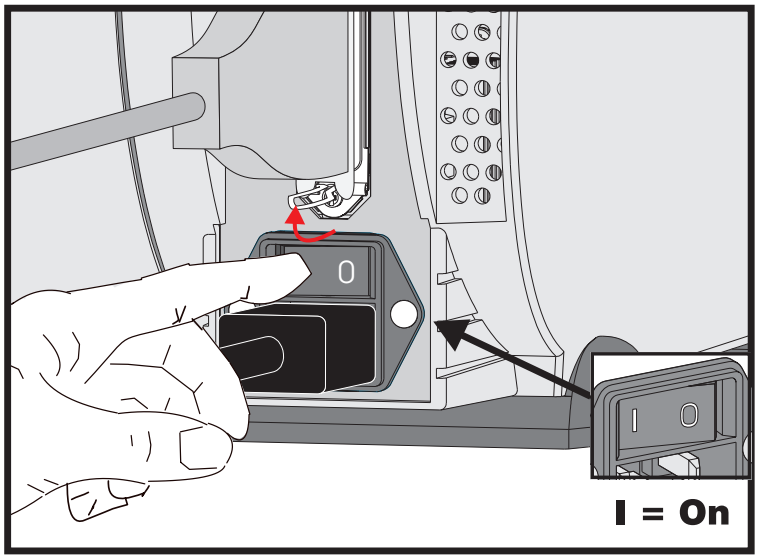
USB Interface



Serial Interface

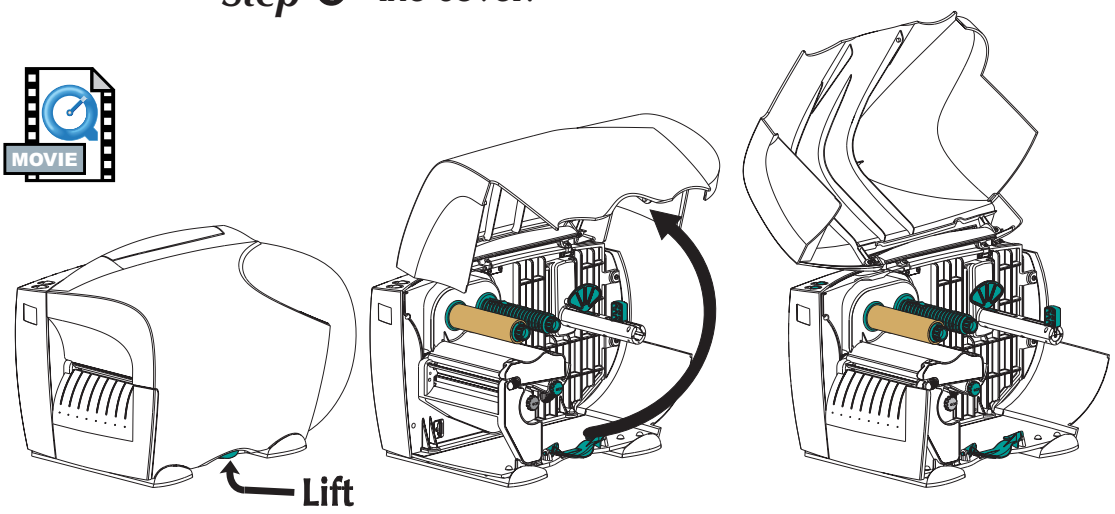


Step ❸ Apply Power



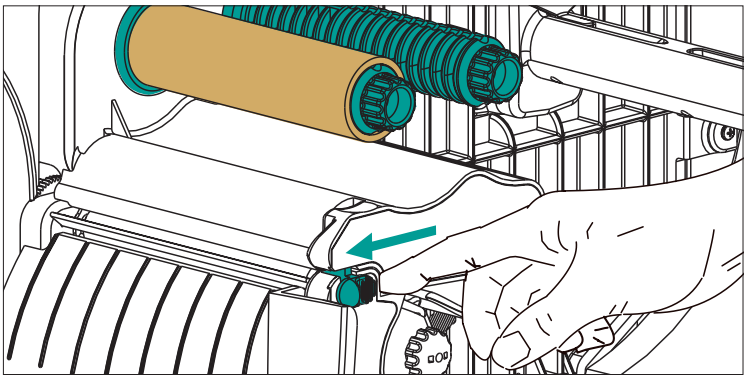
Media Loading

Step ❶ Open the cover. Lift the green latch to unlock the cover.



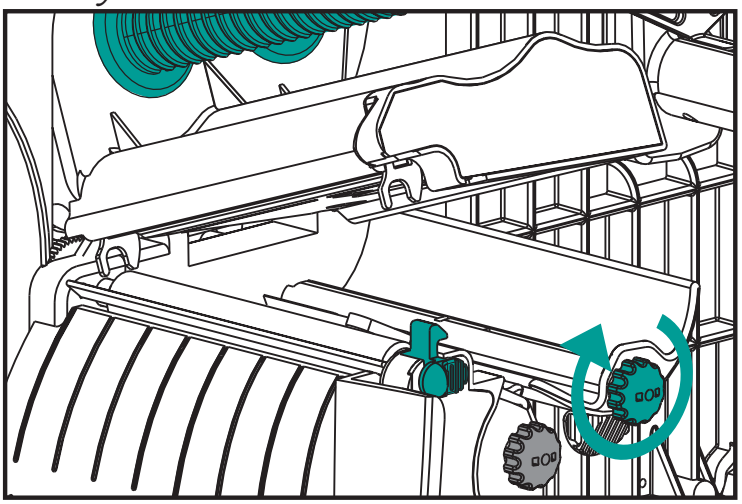
Step ❷

Open the Print Head



Step ❸ Turn the green adjustment knob clockwise to open. Verify the media sensor indicator light is directly under the transmissive sensor.

Open the Media Guides

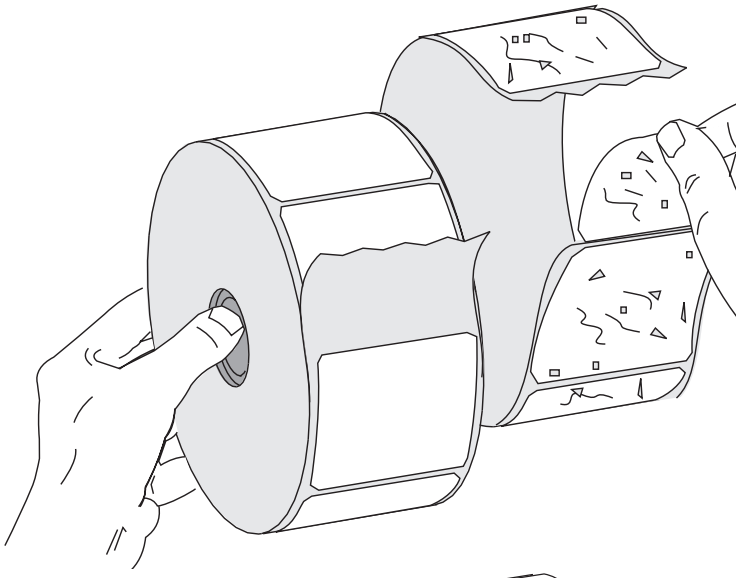


Before You Load Media in the Printer

You must remove the outside length of media (that is, one, full revolution of labels and any liner). When you remove this part of the media, you remove the oils, dust, and adhesives that contaminate it. Tape or adhesive holds the loose end and the outside length of media becomes contaminated when handled or stored.

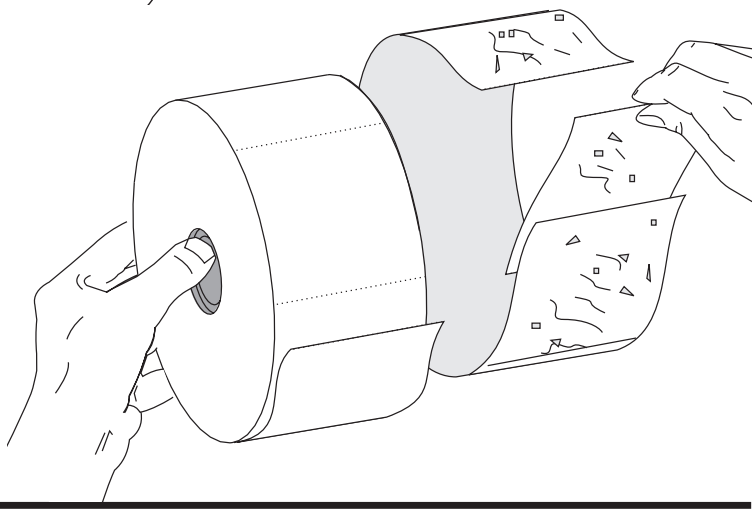
Labels

Remove all labels that are held by adhesives or tape



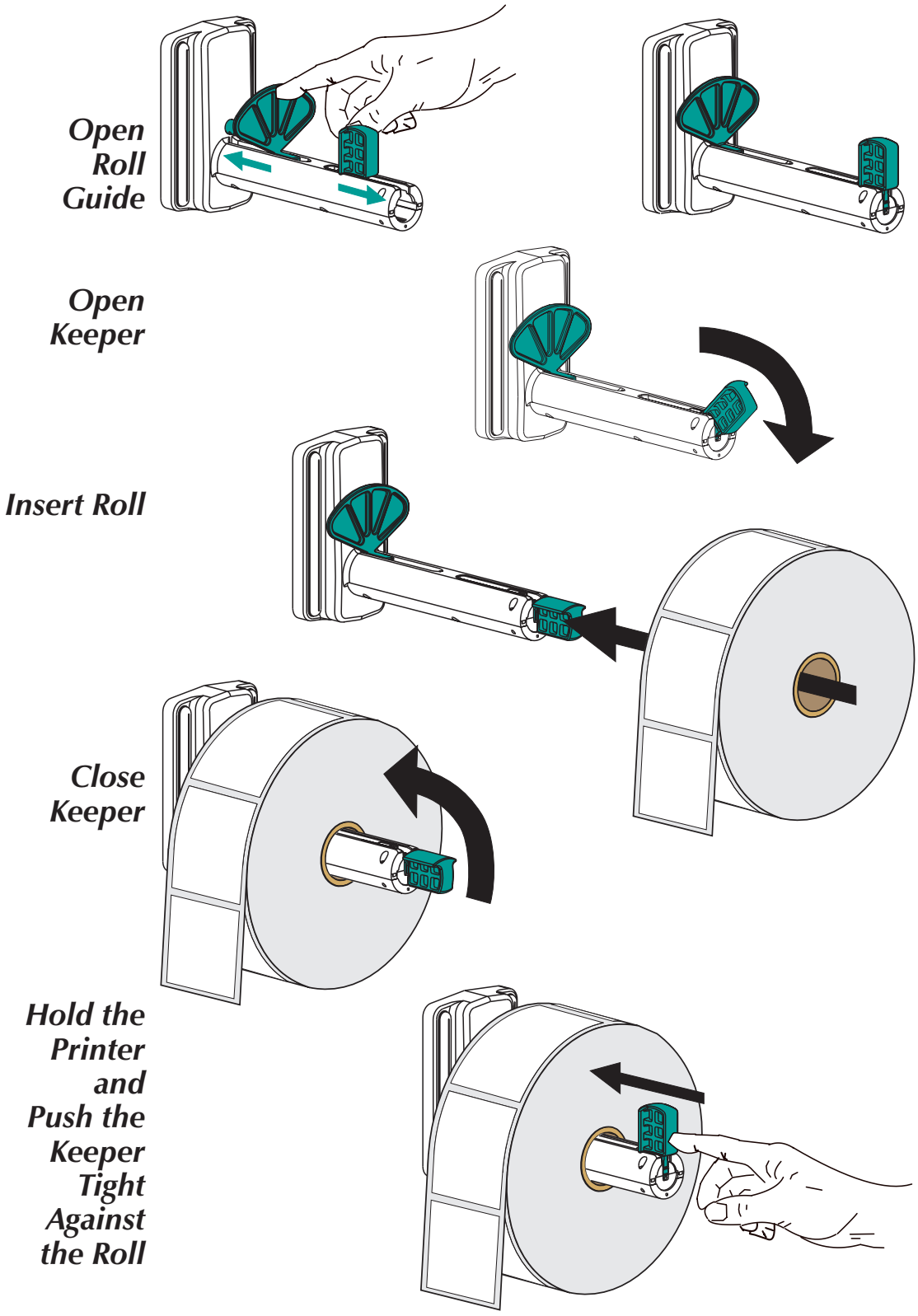
Tag Stock

Detach both ends of the bottom tag



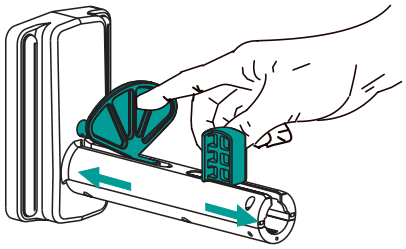
You must avoid dragging adhesive or dirty media between the print head and platen. Such an occurrence damages the print head and is not covered under your warranty. Using clean media prevents damage and reduces wear on the print head and platen.

Media Loading Step ❸ Load the media roll - 1 inch inner diameter.



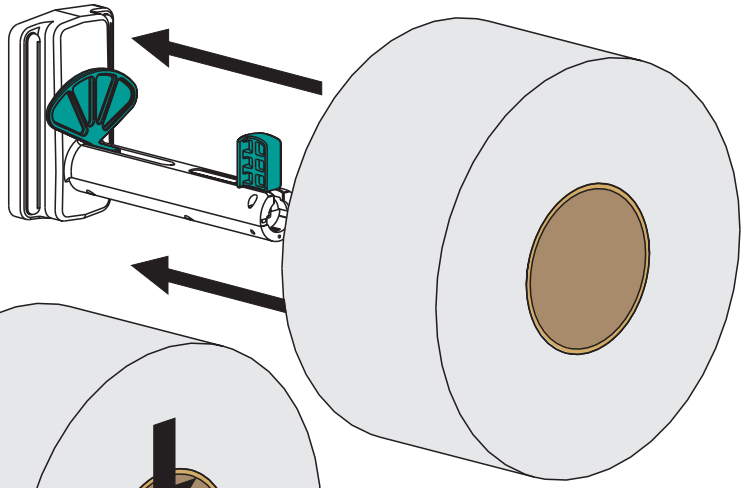
Step ❸ Load the media roll - 3 inch inner diameter.

Open Roll Guide

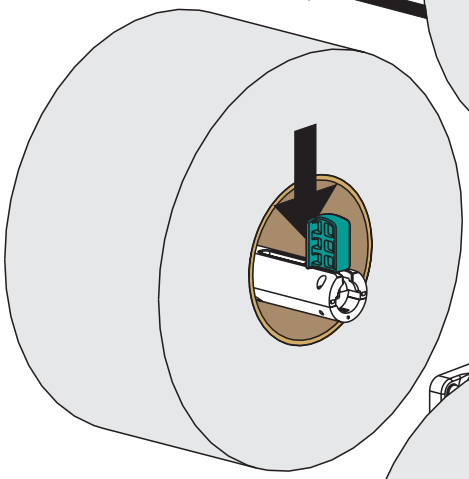


Insert Roll

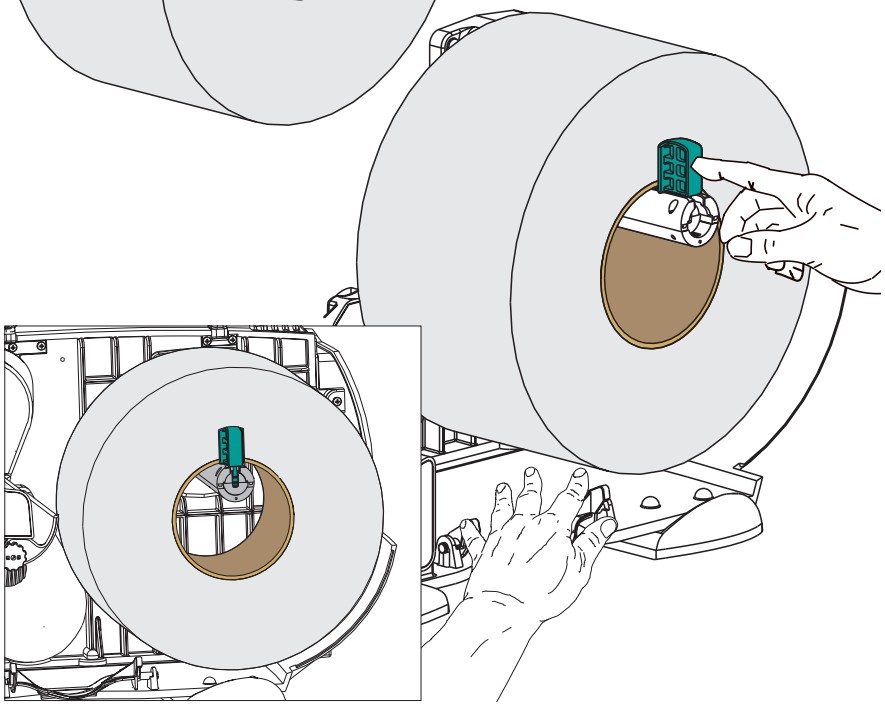
Lift Roll Over Keeper



Set Roll On Holder Between Roll Guide and Keeper



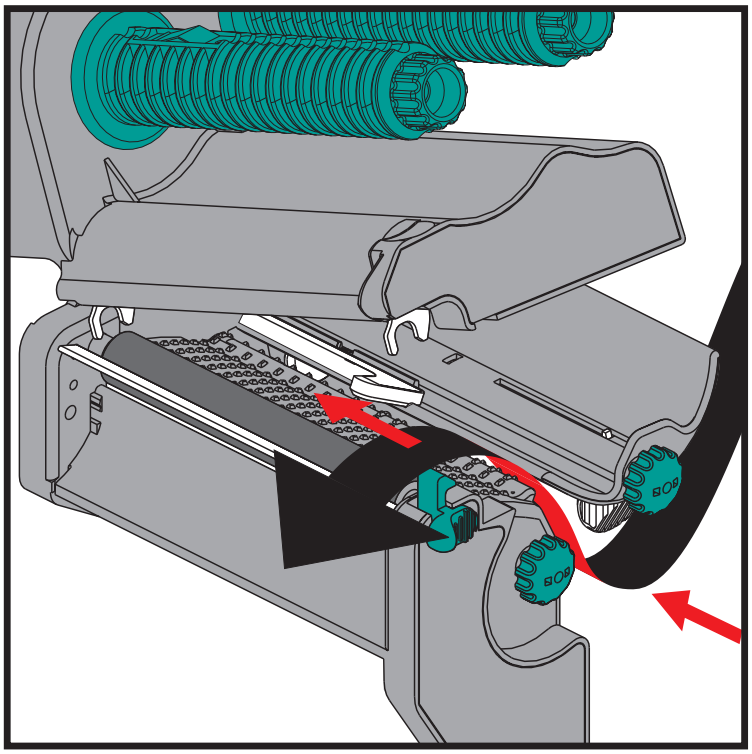
Hold the Printer and Push the Keeper Tight Against the Roll



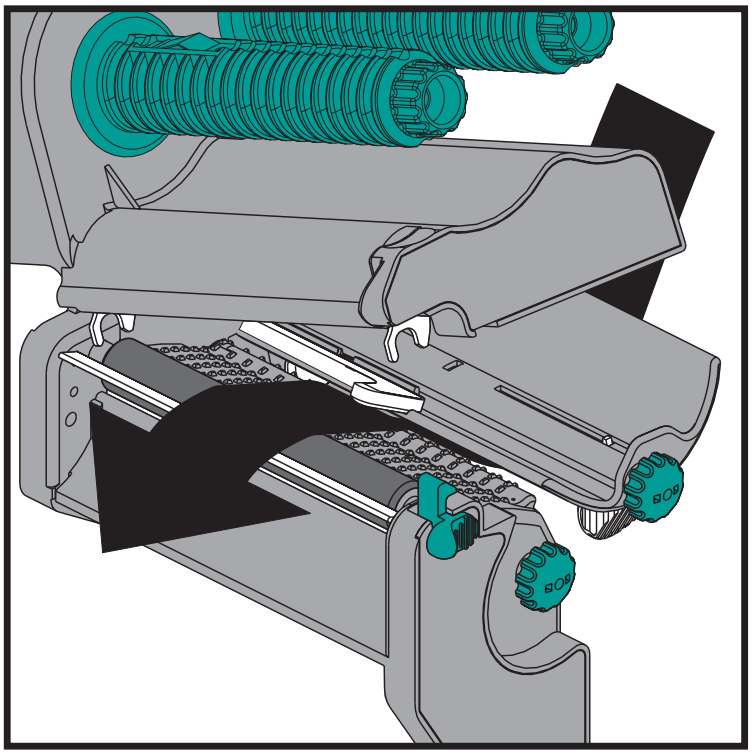
Media Loading Step ❹

Thread the media between the media guide and platen assembly. Center media over the platen roller and under the media sensor.

Thread Media

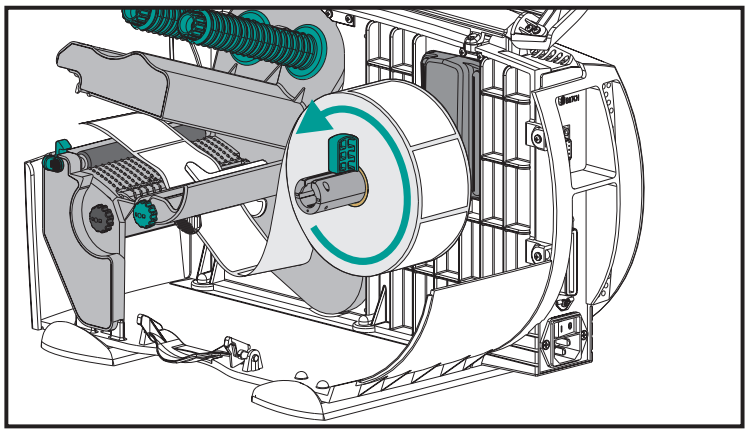


Center Media

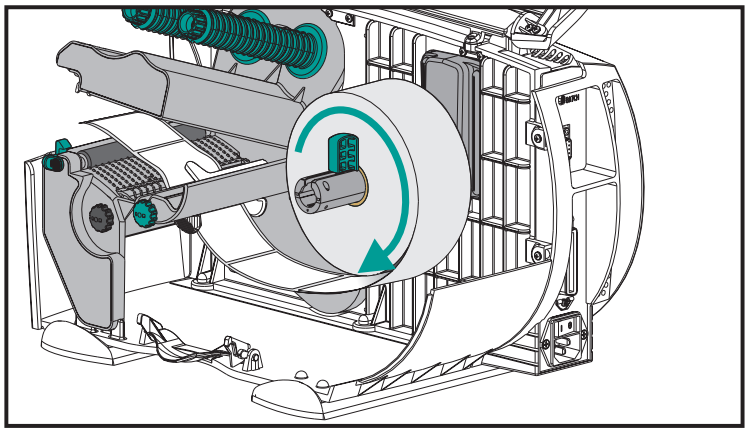


Step ❹ Note the media orientation for the different media delivery methods.

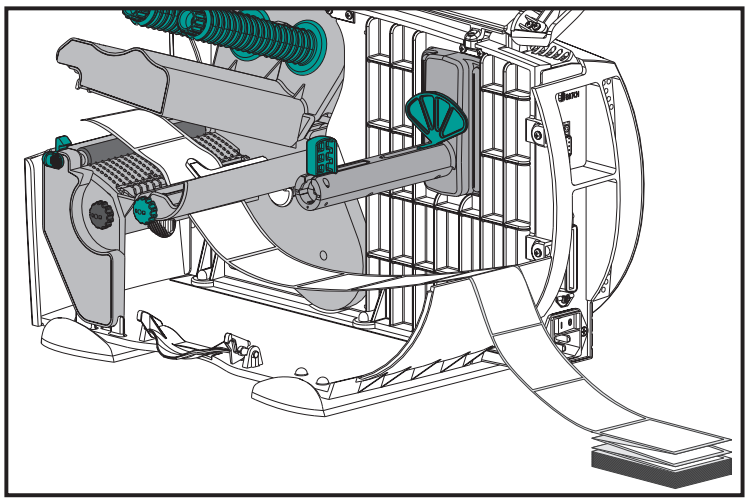
Outside Wound



Inside Wound



Fan Fold

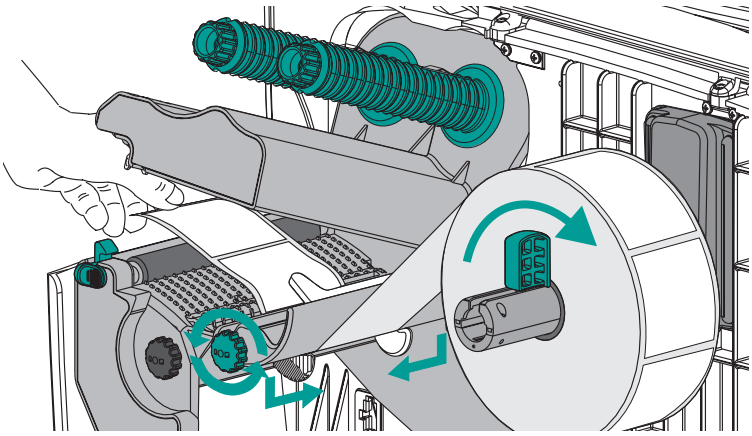


Media Loading

Step ❺ Adjust media guides to match the media width. Turn the adjustment knob clockwise to narrow the guides.

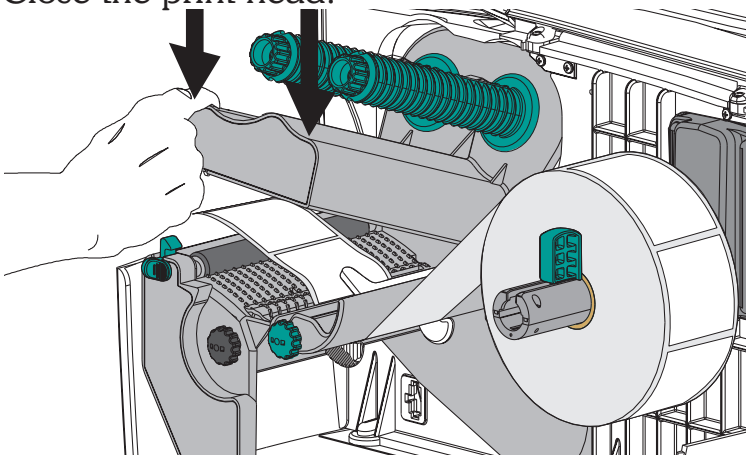
Pull Media Taut

Adjust Media Guides to Media Width



Step ❻ Close the print head.

Close Print Head

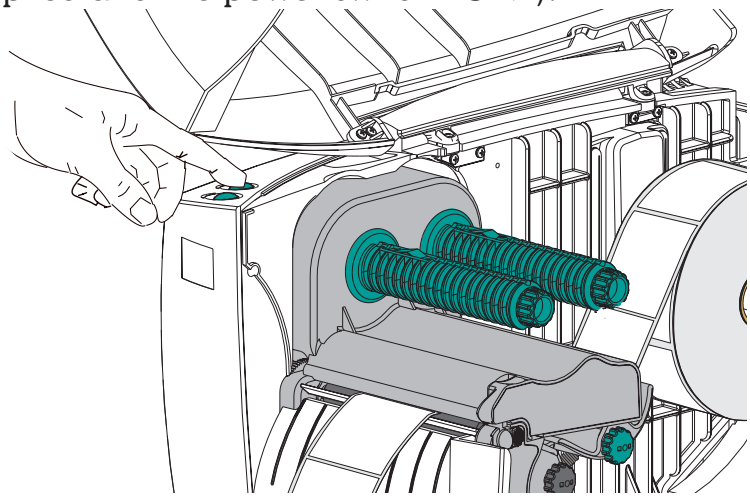


Step ❼ Press the Feed button once (with the power applied and the power switch "ON").

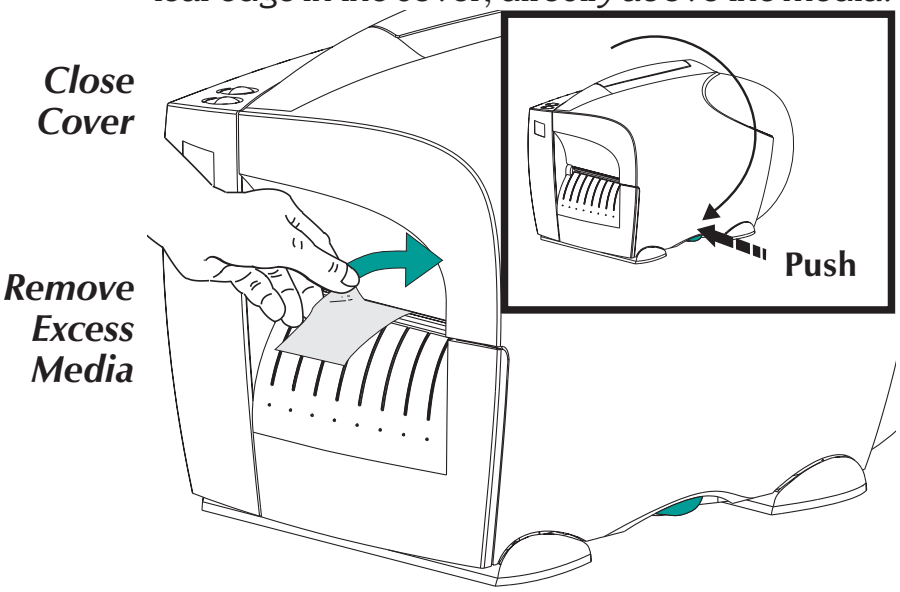
Power ON

Labels Loaded

Press FEED



Step ❽ Close the cover. Remove excess media. Use the tear edge in the cover, directly above the media.



Step ❾ Set label detection parameters for media:

- Use the AutoSense procedure (page 16) for first time use of new media to set transmissive (gap) sensor.
- Use the AutoSense procedure for detection of label and gap lengths.
- Use programming to set continuous media mode. See the **Q** command in the EPL2 programmer's manual for details.

DO NOT turn the power switch OFF (0) while reloading media or data loss may result. Load new media and press the FEED button to automatically resume printing.

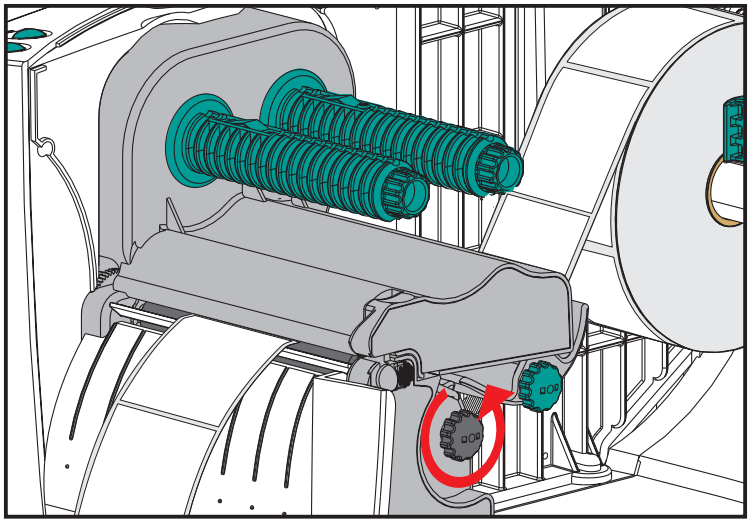
Using AutoSense

AutoSense sets the sensitivity of the transmissive (gap) sensor, measures and stores the form (label) and gap lengths. For more details on media sensing and sensors see page 66. To activate the AutoSense feature:

Step ❶ Load labels into the printer. Verify that the reflective sensor's location (red light) is under the transmissive sensor for label mode operations.

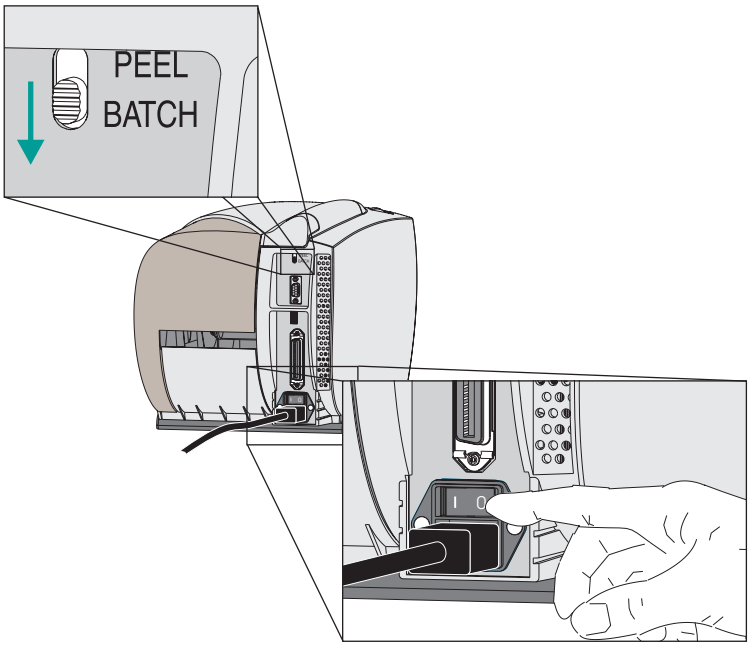
Load Labels

Visually Verify Reflective Sensor Position



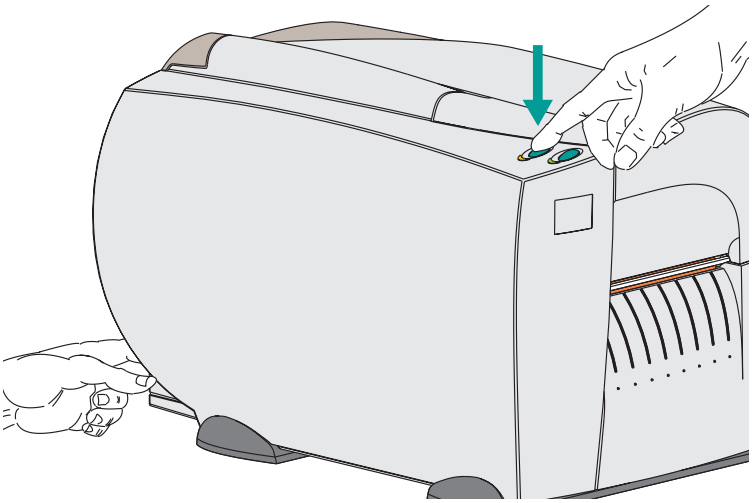
Step ❷ Turn OFF printer power. Set Batch mode. Do not use the peel mode.

Batch Mode

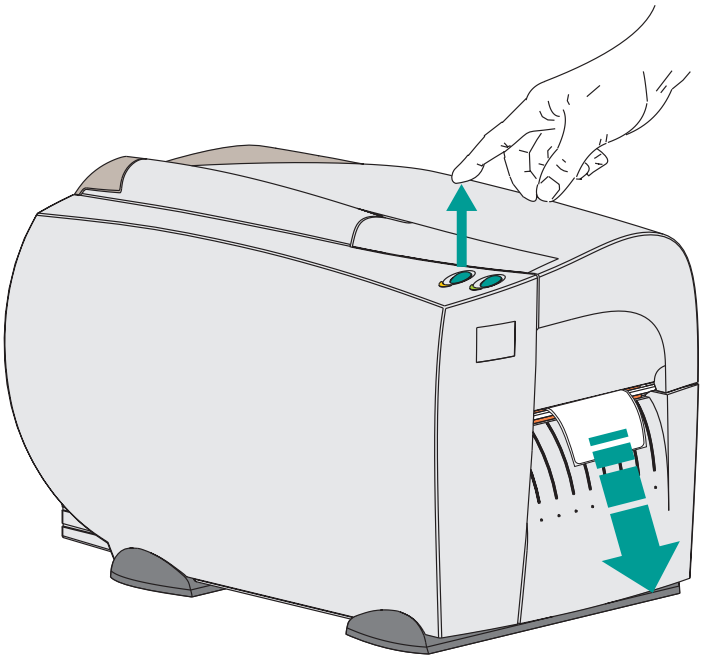


Power OFF

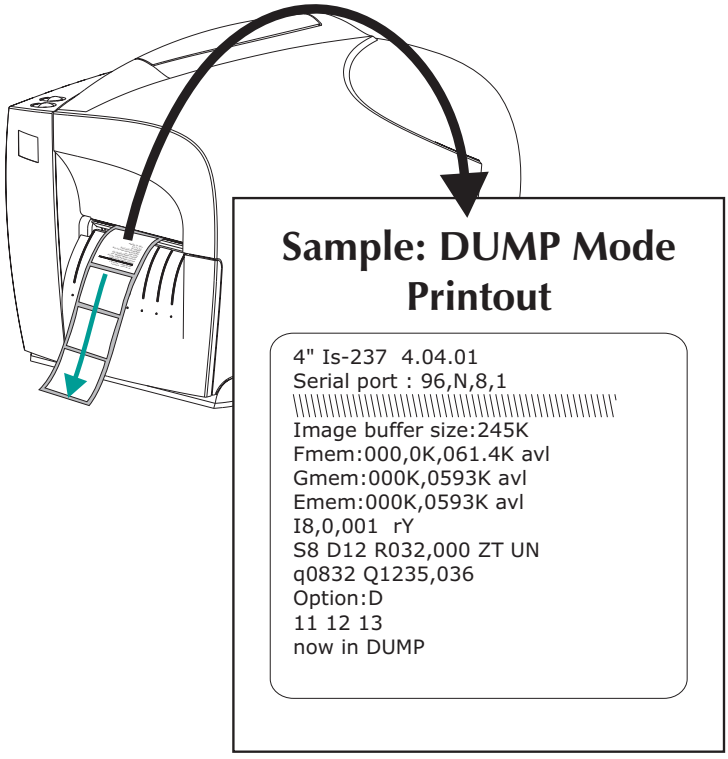
Step ❸ Press and hold the FEED button while turning ON printer power.



Step ❹ Release the FEED button when the power indicator begins to flash and the label will begin to advance.

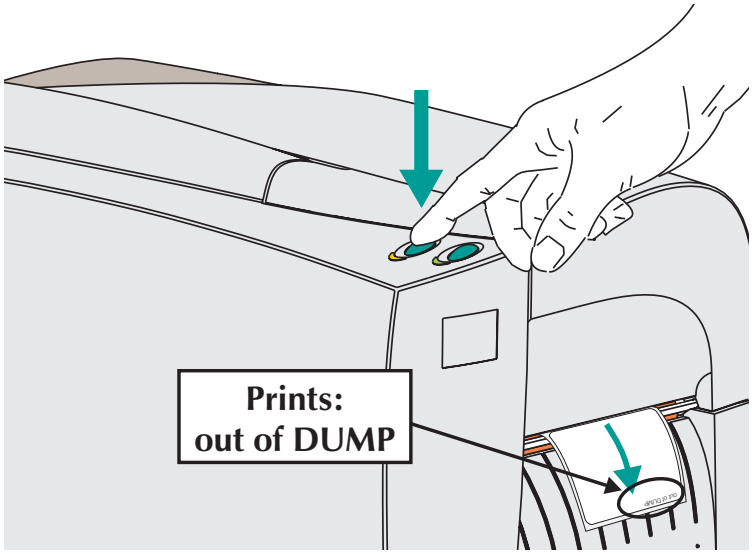


Step ❺ The printer will advance 3-4 labels while performing the sensor adjustment. When the adjustment is complete, a status summary label will be printed and the printer will be placed in Diagnostic Dump mode.



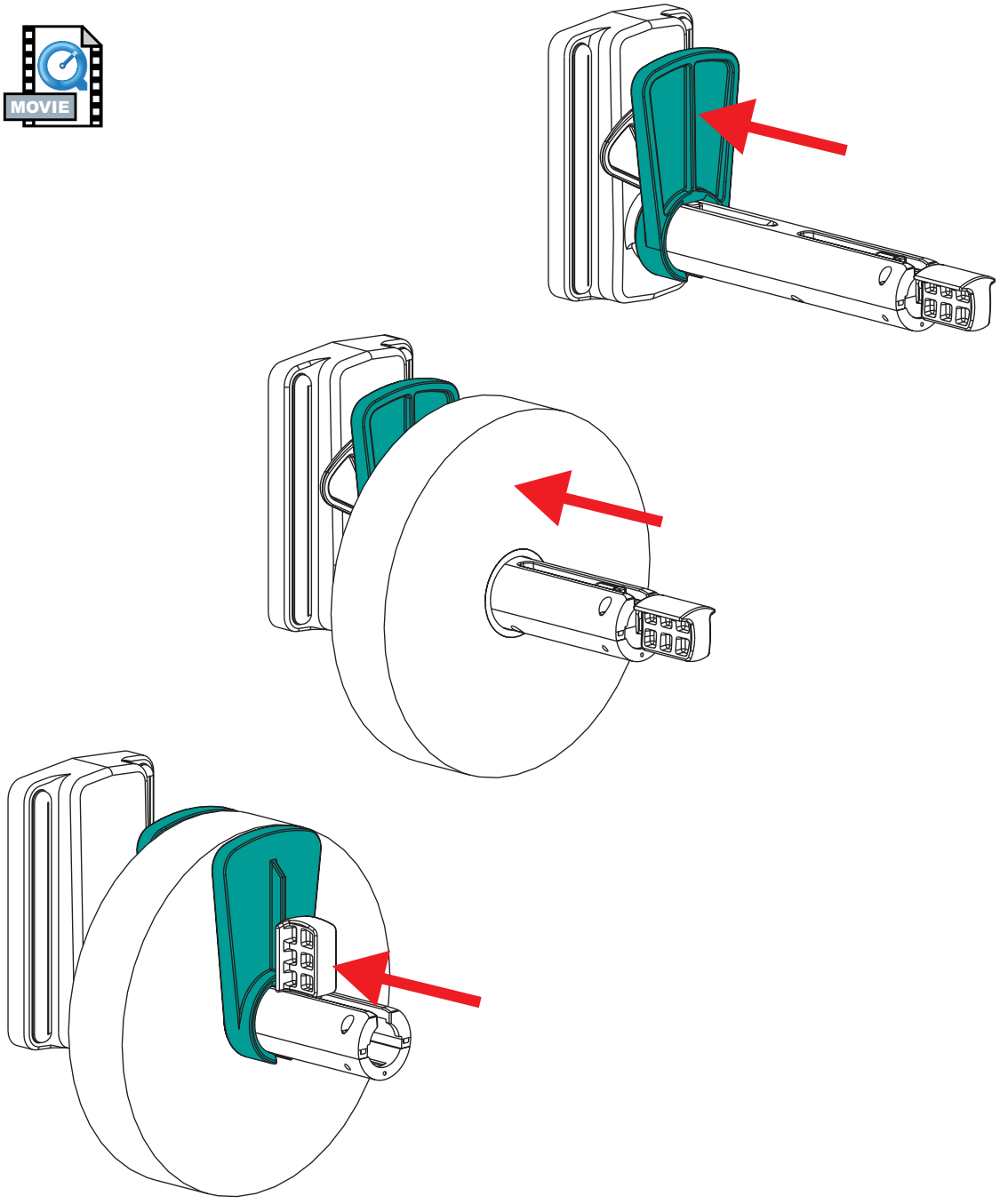
Step ❻ Press the FEED button to exit the Dump mode. Remove excess labels.

Press FEED



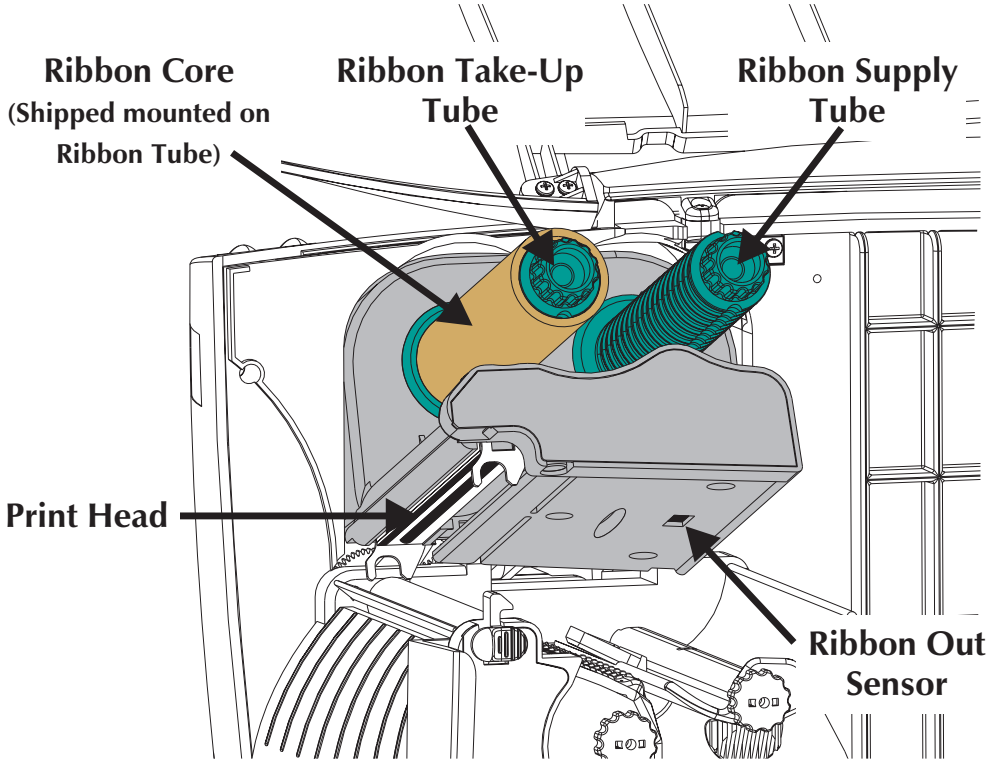
Narrow Media Adapters

The printer has media roll adapters for media that is less than 2 inches wide to a minimum width of 1 inch. Slide the adapters on the media roll holder and around the roll. The tall sides of the adapters face the media roll, see below.



Thermal Transfer Printer Features

The thermal transfer printer supports wax, resin, and wax resin ribbons in 1 inch (24.5mm) inner (nominal) and 2.53 inch (64mm) maximum outer diameters.



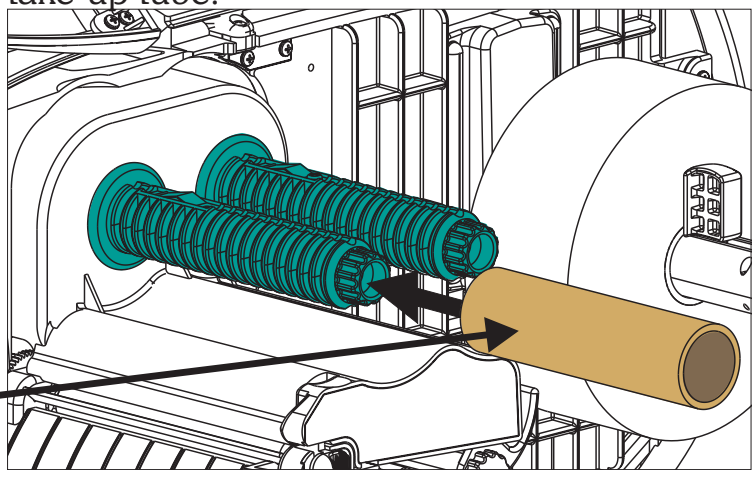
Loading Transfer Ribbon

Refer to the following instructions for installation of the ribbon.

MOVIE

Step ❶ Insert an empty ribbon core on the ribbon take-up tube.

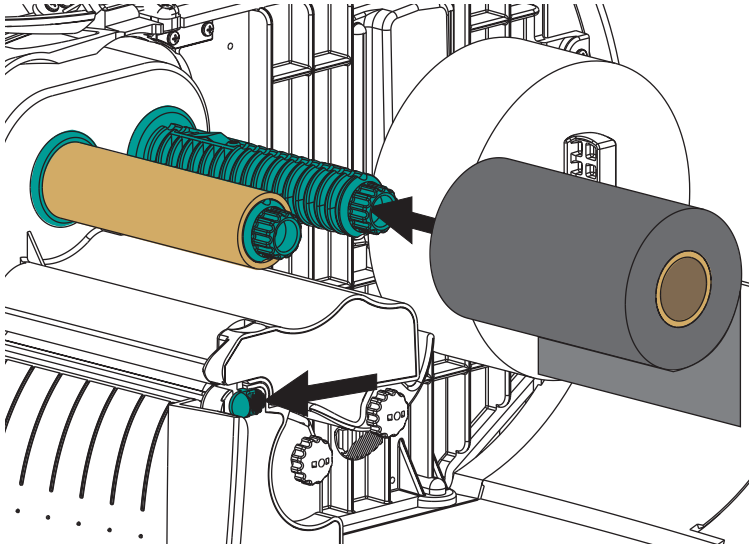
Insert Ribbon Core



Step ❷ Insert a transfer ribbon roll on the ribbon supply tube. The transfer ribbon unwinds clockwise. Open the print head.

Insert Ribbon Roll

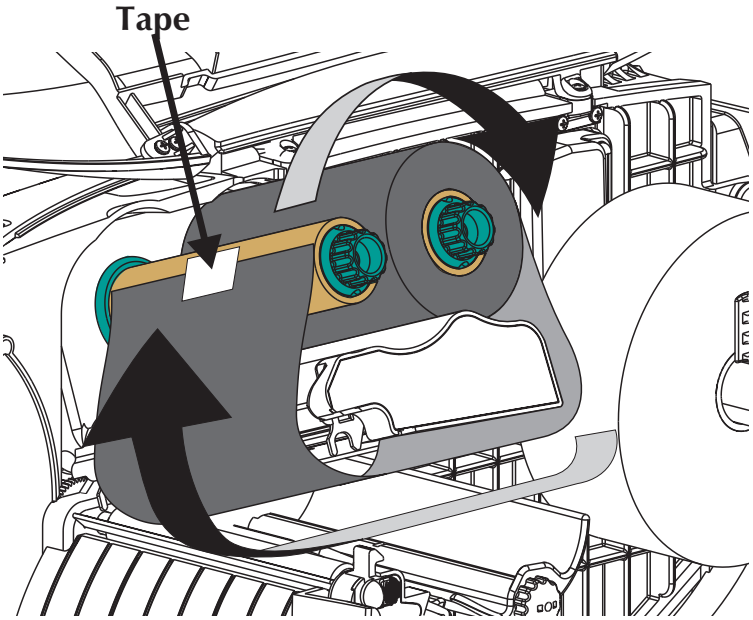
Open Print Head



Step ❸ Thread the transfer ribbon under the print head assembly and clockwise around the ribbon core and take-up tube. Attach the ribbon to the core.

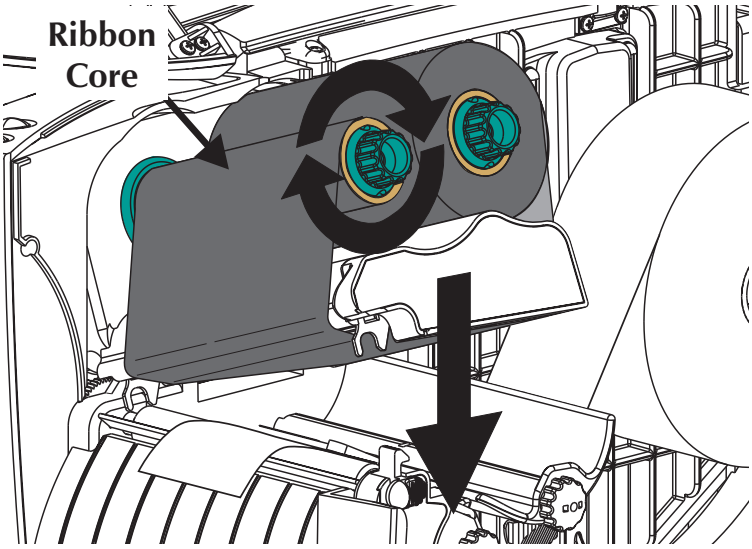
Thread Ribbon

Attach Ribbon to Ribbon Core



Loading Transfer Ribbon - Step ❹

Turn the ribbon take-up tube clockwise a minimum of two (2) times to lock the ribbon on the core.



Step ❺

With printer power ON and media loaded, press the FEED button until approximately 6 inches or 150 mm of media has advanced.

Configuring Thermal Transfer Printing

By default, the thermal transfer printer is set to the direct thermal print mode as configured "Out of the Box". The printer will print thermal transfer media in direct thermal mode, but it will not sense a ribbon out media condition.

The most common method of changing the print mode is to use the Windows printer driver. Select the Ht-146 printer and print a label.

To configure thermal transfer printing with programming, use the **O** (thermal transfer) and **OD** (direct thermal) commands. The print mode will be set until changed by programming.

See the EPL2 programmer's manual for important details on printer programming and printing using the Option (**O**) command.

2
Operator Maintenance

This section provides information on operator maintenance procedures for your printer.

Cleaning Your Printer

The printer's media path allows for cleaning and clearing of media jams. The user can clean the print head, platen roller and areas adjacent to the media path surfaces.

Warning -Shock Hazard - See page v.
Always turn the printer off before cleaning.

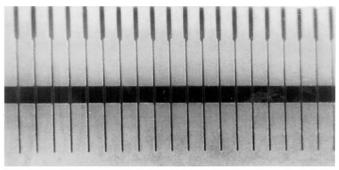
The media path surfaces (except the print head) can be cleaned with a lint free, clean, damp cloth very lightly moistened with medical grade alcohol. Alcohol may be used to help remove any adhesive or label material buildup.

If a label has become jammed in the printer, remove the label and any adhesive residue, immediately. Adhesive may spread through out the printer's media path if not completely removed. Many adhesives are permanent and have short "set" times.

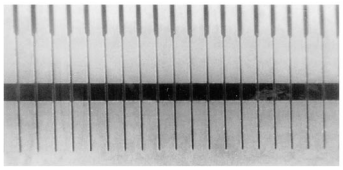
Extending Print Head Life

The print head is the most critical component in your printer, and possibly the most delicate. It is a consumable item just like the brakes on your car, which will eventually wear over time. However, with ongoing careful attention and maintenance, you can extend the life of the print head!

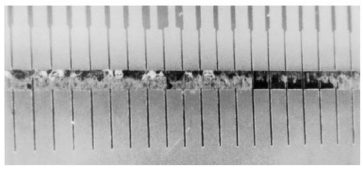
Below are photographs of three print heads. The first print head is brand new. The second has printed over 1 million linear inches of thermal transfer labels and has been properly maintained. The third print head has printed far fewer labels, but without proper care and maintenance, signs of abrasion and contamination build-up are evident.



New



Over 1 Million Inches (Properly Maintained)



Less Than 1 Million Inches (Without Proper Care)

Contaminant buildup occurs gradually and results in poor print quality that may look like faded print or failed print element(s). This build up is very resistant to cleaning with the pre-soaked swabs and is difficult to remove.

Note - The one million inches of print head usage shown in the illustration above is used for reference only. The actual print head life will vary due to enviromental conditions, printer setup and the properties of the media used. See Print Head Care for more details.

Print Head Care

The main factors that contribute to reduced head life are:

- Touching the print head! Static electricity can discharge and damage the print head. The body's oils and acids also damage the print head.
- Cleaning - For optimum performance, clean the print head regularly after every roll of thermal transfer ribbon or after every roll of direct thermal labels.
- Abrasion - Over time, the movement of media/ribbon across the print head will wear through the protective ceramic coating, exposing and eventually damaging the print elements (dots).
- Use of proper media - Use only approved approve Eltron or Zebra media. Non-approved media may contain chemicals that can destroy or dramatically reduce the print head's life. Approved thermal transfer ribbons have a special anti-stick back coating that helps to dissipate static and provide lubrication.
- Ribbon Width - Ensure that the thermal transfer ribbon is as wide or wider than the label media to prevent exposing the elements to the more abrasive label material.
- Temperature - Print head density (heat) setting. Set the density to the lowest possible setting that prints a good image.
- Print Speed - Fast print speeds have higher friction levels on the print head's surface.
- Regular Print Head Conditioning - Use our Save-a-Print head cleaning film to remove print head contamination buildup quickly and easily. (Part No.105950-047)

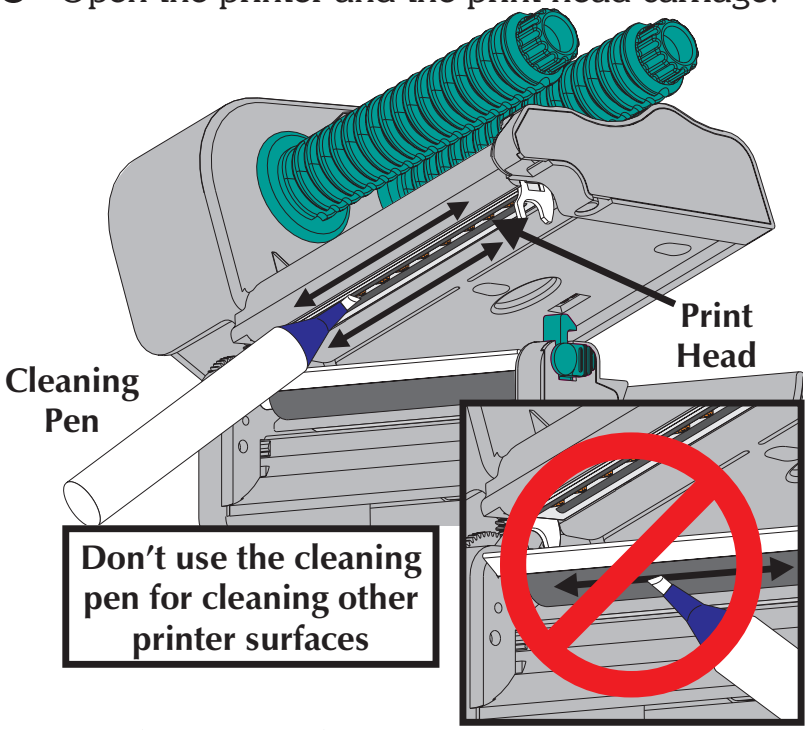
Cleaning the Print Head

As you use your printer, the print head may become contaminated resulting in poor print quality. Whenever new labels are loaded into the printer, the print head should be cleaned with a cleaning pen.

Warning - Static Discharge - See page v. Never touch the print head. Always clean the print head with a cleaning pen (to protect the print head from static discharge and fibers).

MOVIE

Step ❶ Open the printer and the print head carriage.



Step ❷ Gently rub the cleaning pen across the surface of the print head. Clean the black surface towards the front edge of the print head.

Allow the print head to dry for 1 minute before loading labels.

Do Not Clean the Print Head with sharp objects! Only used approved cleaning materials.

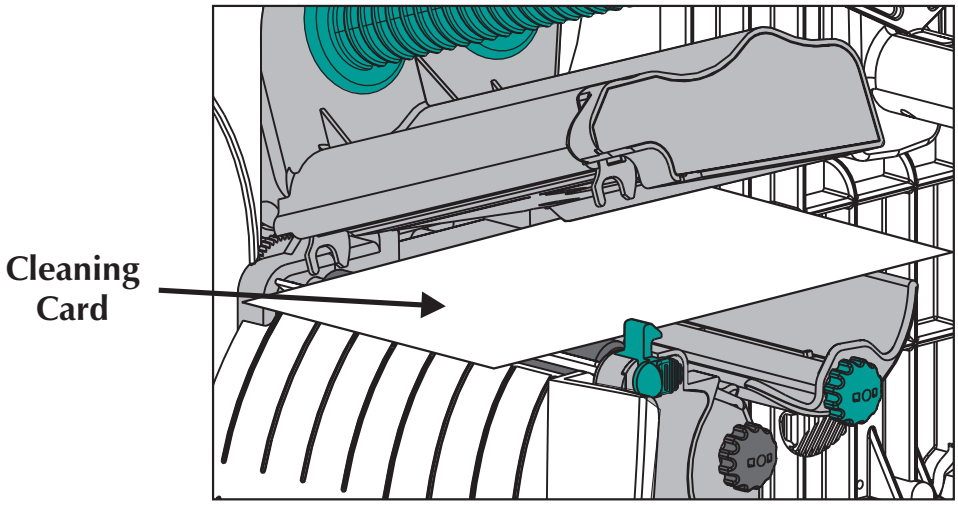
Platen Cleaning

Liner-free platen printers require periodic cleaning. Adhesive and particles can build up and cause the media to stick.

The standard printer platen does not normally require cleaning. Normal operation leaves label liner particles which is normal. Clean the platen only to remove adhesive (or other contaminates).

Step ❶ Open the print head and remove the media.

Step ❷ Place a cleaning card on the platen (and all of lower print mechanism).



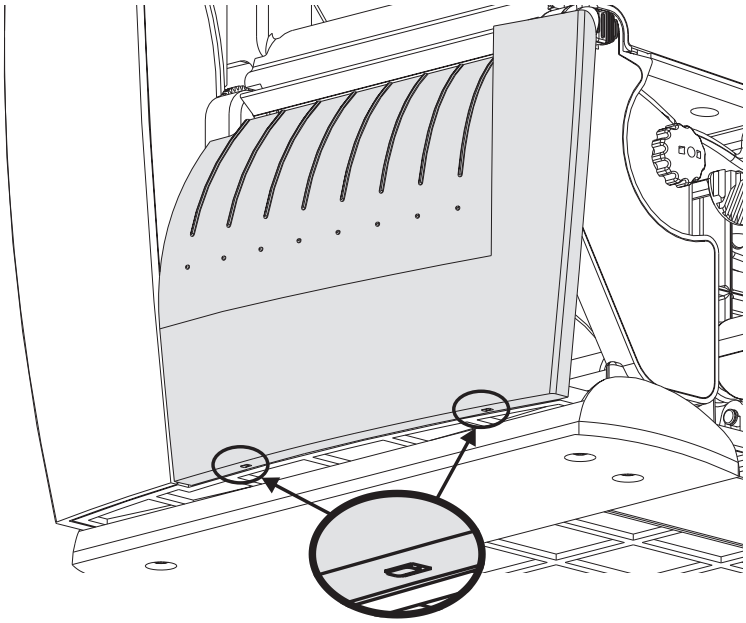
Step ❸ Press the FEED button and the media will feed. Repeat until the cleaning card has ejected from the front. If the card stops feeding with a media out error, press the PAUSE and then the FEED button to clear the error. Press the FEED button. Repeat button sequence as necessary.

Step ❹ Repeat steps 2 and 3 until the platen is clean. Do not re-use cleaning cards.

Front Bezel Access

The printer's front bezel is designed for easy removal and replacement. Some printer maintenance operations are facilitated by the removal of the front bezel.

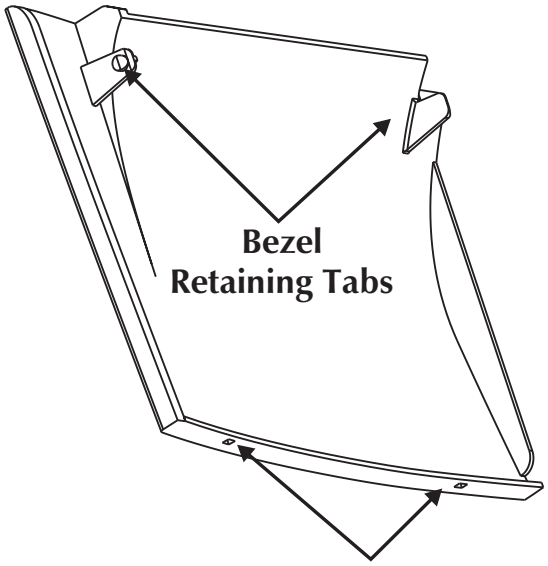
Standard Front Bezel



Bezel Guide Tabs in Slots

The front bezel should be installed for normal print operations. The front bezel helps to keep the printer clean. Some printer options supercede the use of the standard front bezel.

Inside of Front Bezel



Bezel Guide Slots

Front Bezel Removal

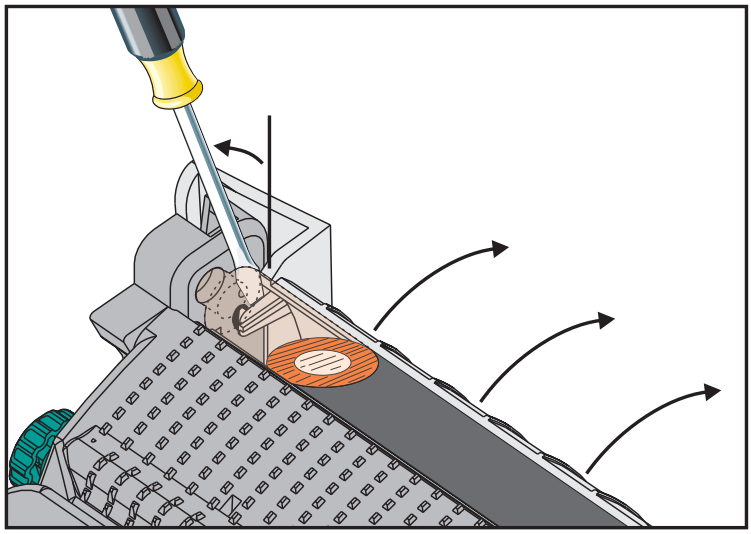
The front bezel can be easily removed with a small blade screwdriver.

Step ❶ Open cover.

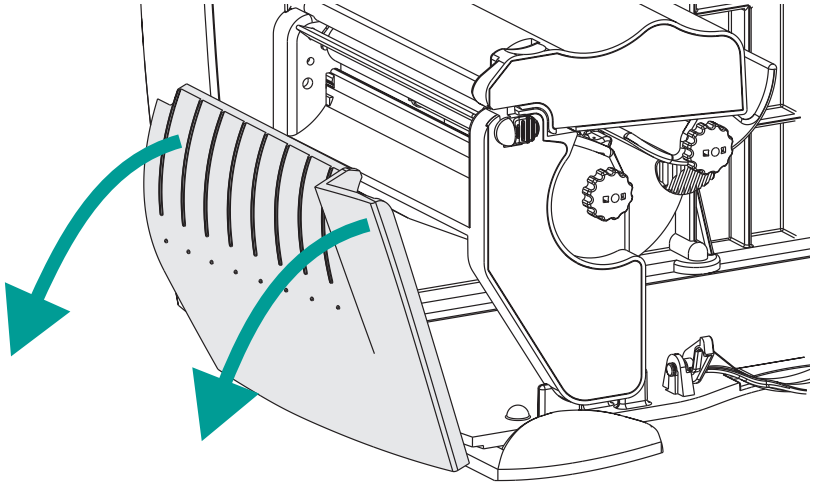
Step ❷ Slide the blade of the screwdriver between the front bezel's retaining tab arm and the inside wall of the lower print mechanism.

Pry Bezel Arm Open with Screwdriver

Swing Bezel Down and Off

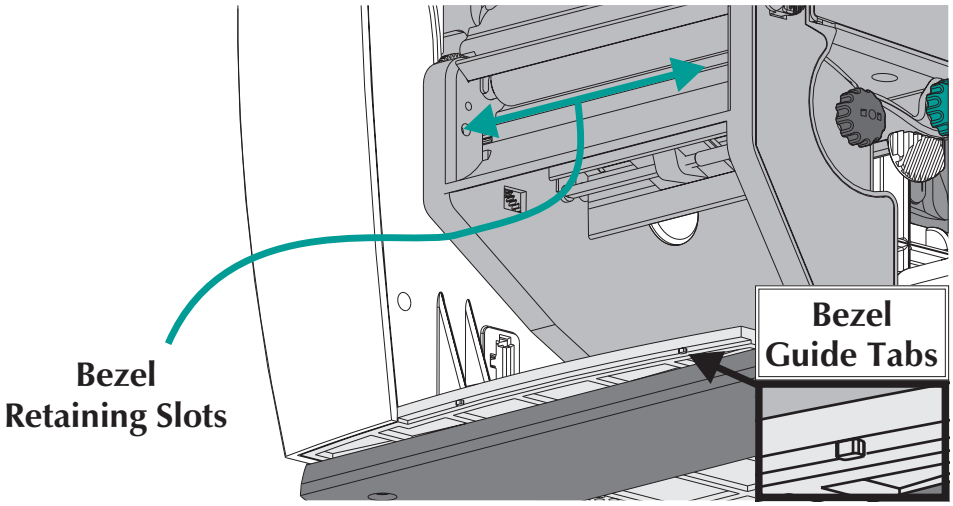


While gently pulling on the top right corner of the front bezel, gently pry the tab away from the inside wall of the print mechanism.



Replacing the Front Bezel

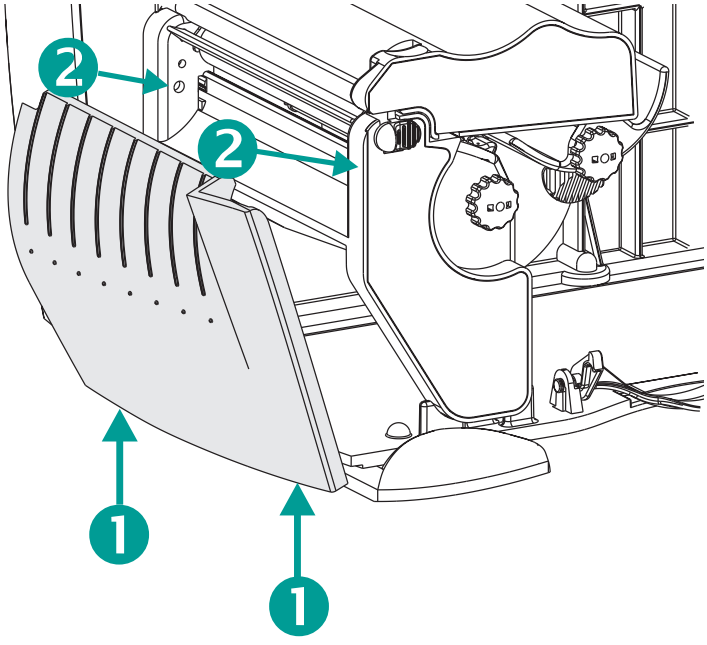
To replace the bezel, simply snap it onto the printer.



Step ❶ Align the bezel guide slots to the bezel guide tabs on the bottom of the printer.

Insert Bezel Guide Slot onto Tabs

Snap Retainer Tabs into Retainer Slots



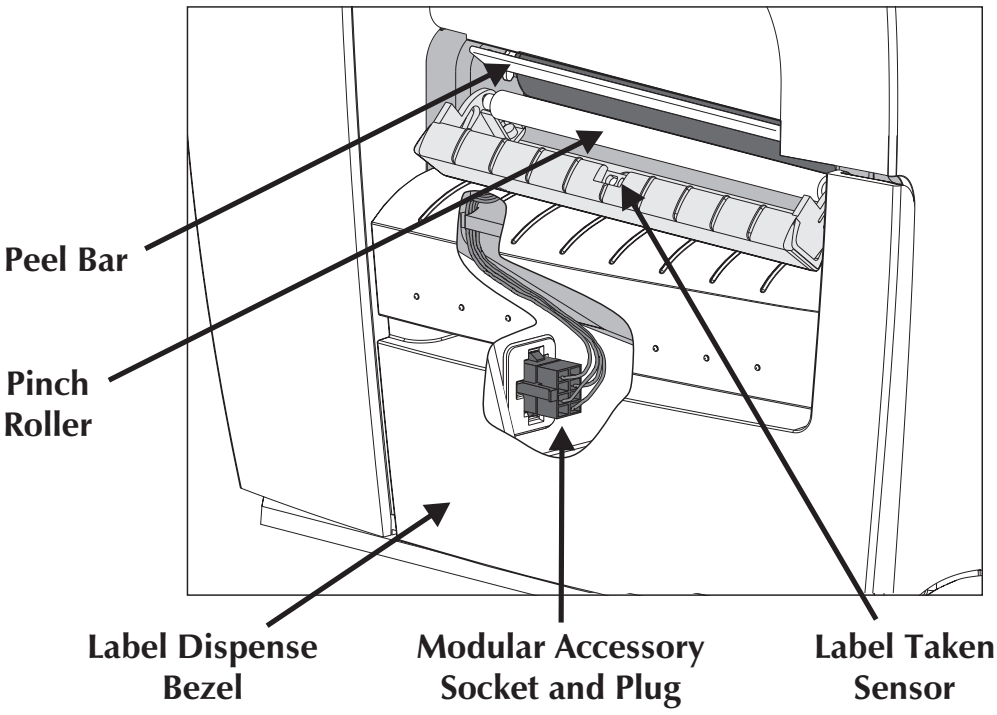
Step 2 Swing the bezel up while pivoting on the guide tabs and into the print mechanism. The bezel will snap in place with a gentle push. The retainer tabs will lock the bezel in place at the print mechanism's retainer slots.

3
Using the Label Dispense Option

This section provides information on the printer's Automatic Label Peel and Print option.

Label Dispense Features

The printer can dispense a single peeled label in the Label Dispense (Peel) mode. Removing the presented label will prompt the printer to print the next label.



Label Dispenser Mounting

The label dispenser is mounted in place of the front bezel.

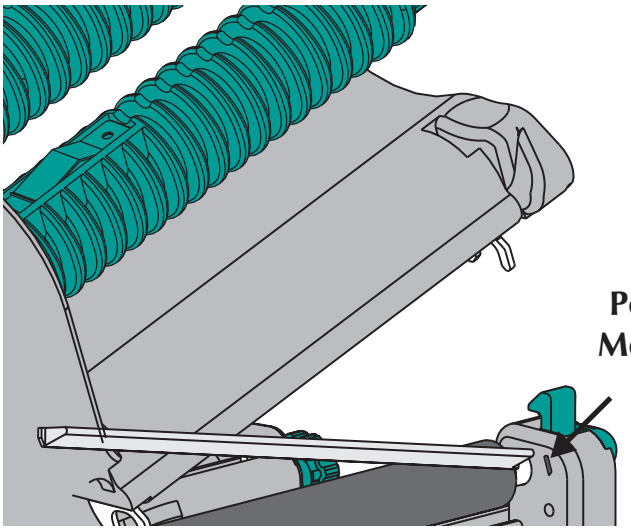
MOVIE

Step ❶ Turn the power off. Open the cover. Remove the bezel, see “Front Bezel Removal”, page 29.

Step ❷ Open the print head. Insert the right side of the peel bar into the print mechanism’s right peel bar mounting slot. Note that the left side has the beveled tab.

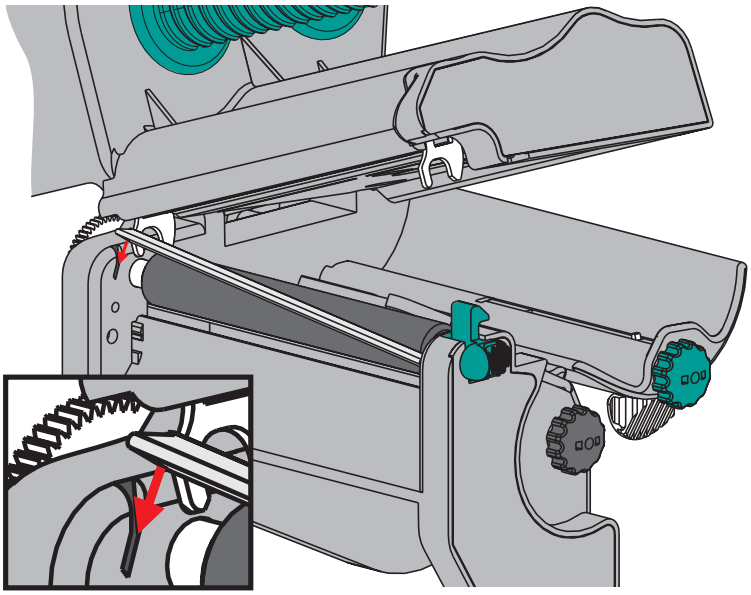
Open Print Head

Insert Right Side of Peel Bar



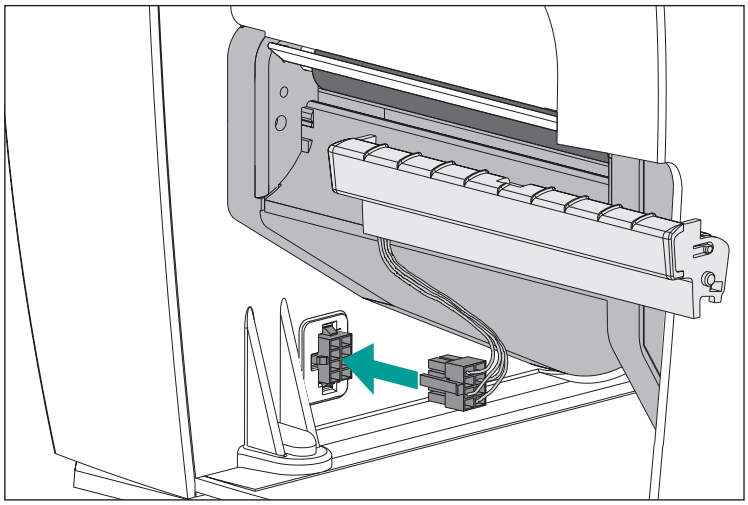
Swing the left side of the peel bar’s tab into the peel bar guide channel and down into the left mounting slot.

Insert Left Side of Peel Bar



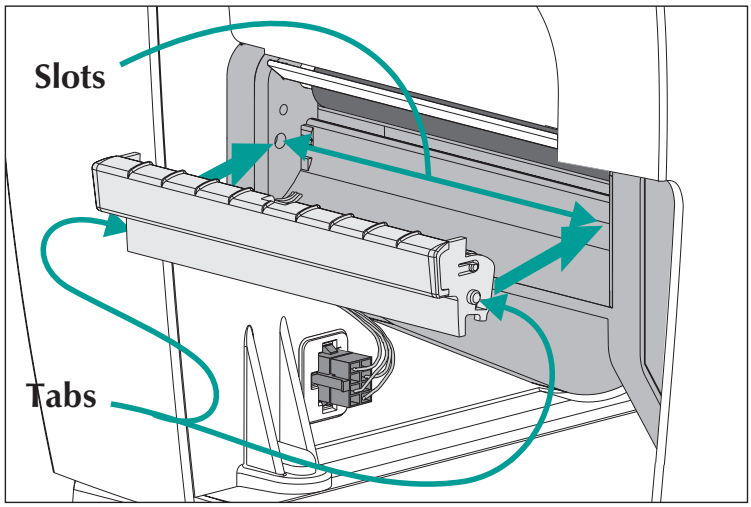
Step ❸ Connect the label dispenser's (accessory) cable plug into the accessory socket.

Plug-in Label Dispenser



Step ❹ Slide the left tab of the label dispenser into the left slot on the print mechanism. Swing the right tab into the right slot.

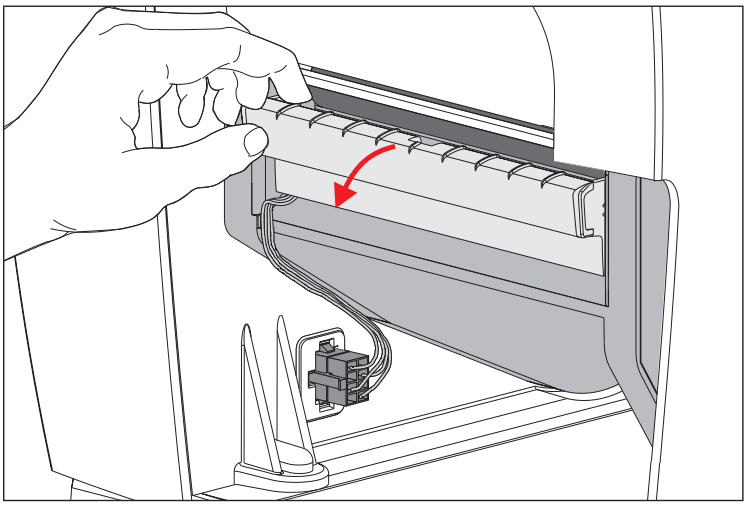
Insert Label Dispenser



Label Dispenser Mounting Step ❺

Pull the label dispenser door open.

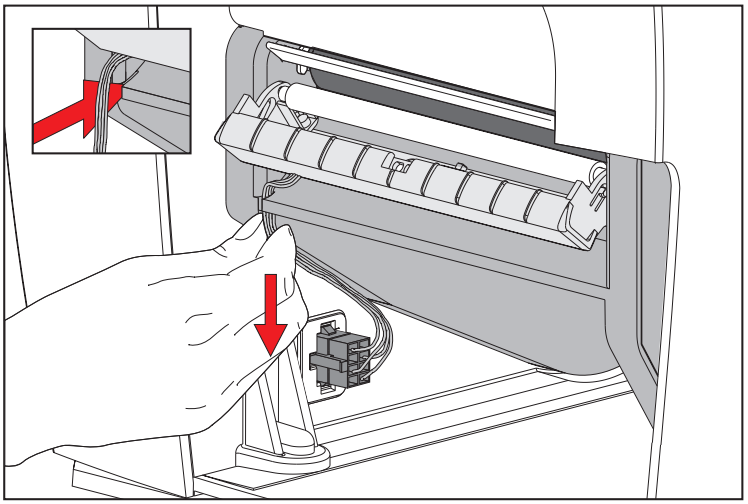
Open Label Dispenser



Slide the label dispenser's cable into the slot immediately under the left end of the label dispenser.

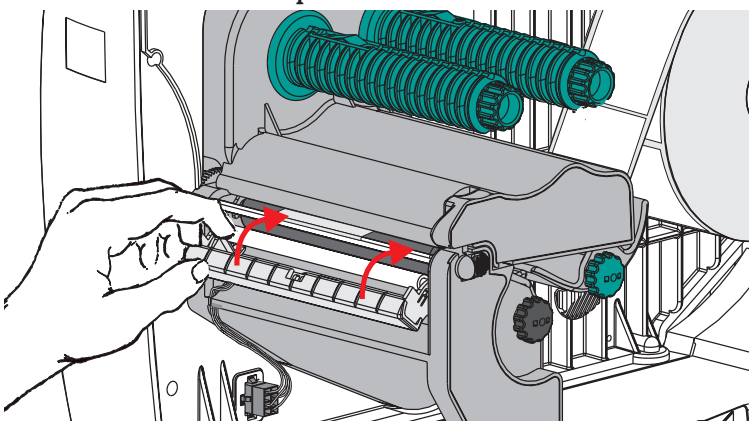
Insert Cable in the Slot

Pull Cable Taut

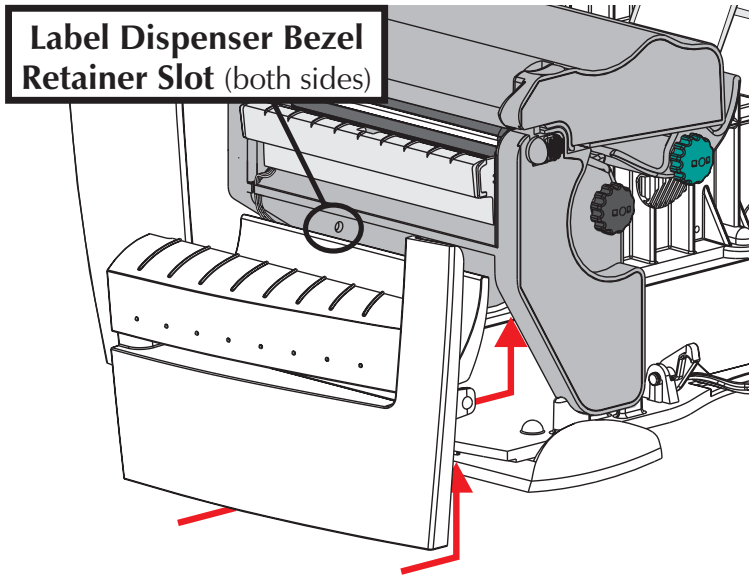


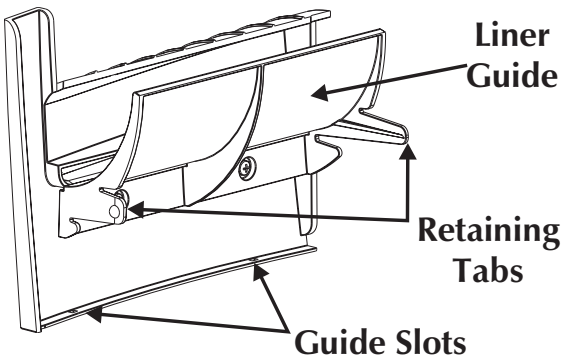
Pull the cable gently down to remove slack from the under side of the open label dispenser.

Step ❻ Close the label dispenser.



Step ❼ Insert the liner guide (on the inside of the label dispenser bezel) into the area below the print mechanism. Insert the bezel guide slots onto the guide tabs on the bottom of the printer, see page 29. Slide the bezel up to snap it in place.


Label Dispenser Bezel Retainer Slot (both sides)
Insert Bezel Guide Slot onto Tabs
Snap Retainer Tabs into Retainer Slots



Using Label Dispense

The printer can dispense a single peeled label without the liner in the "Automatic" Label Dispense (Peel) mode. Removing the presented label will prompt the printer to print the next label.

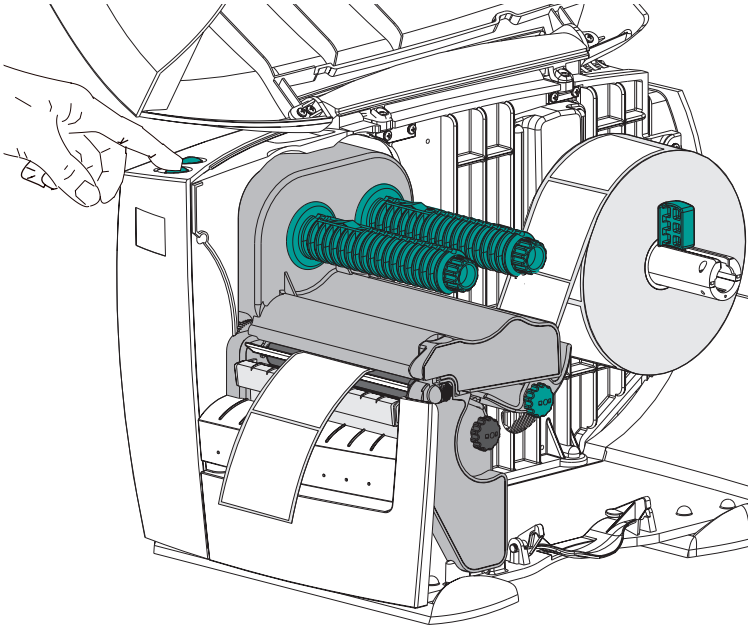
Step ❶ Open the cover.

Load and set label parameters (via AutoSense or programmed with the **Q** command).

Power ON

Labels Loaded

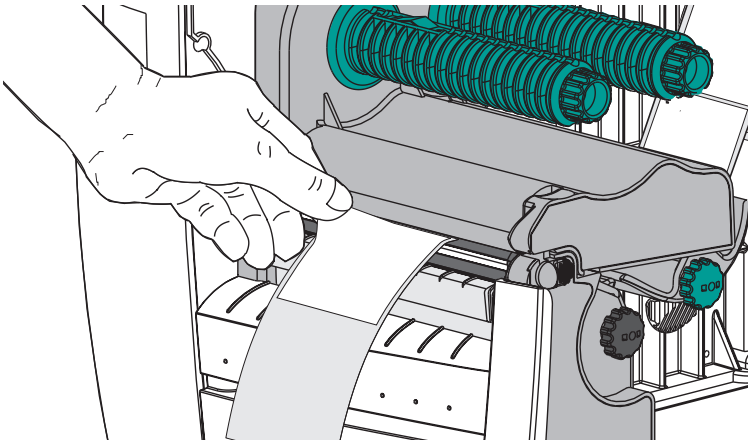
Press FEED



Step ❷ Press the FEED button until approximately 8 inches (20 cm) of media has exited the printer.

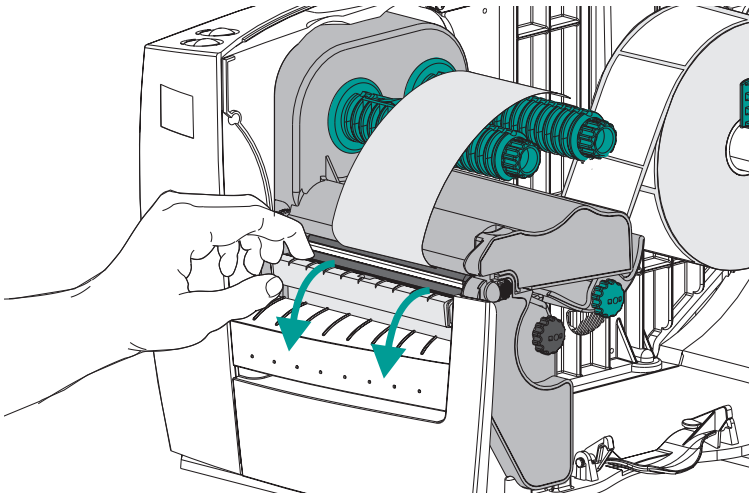
Step ❸ Remove the exposed labels from the media liner (backing).

Peel Exposed Labels



Step ❹ Swing the label dispenser down to open.

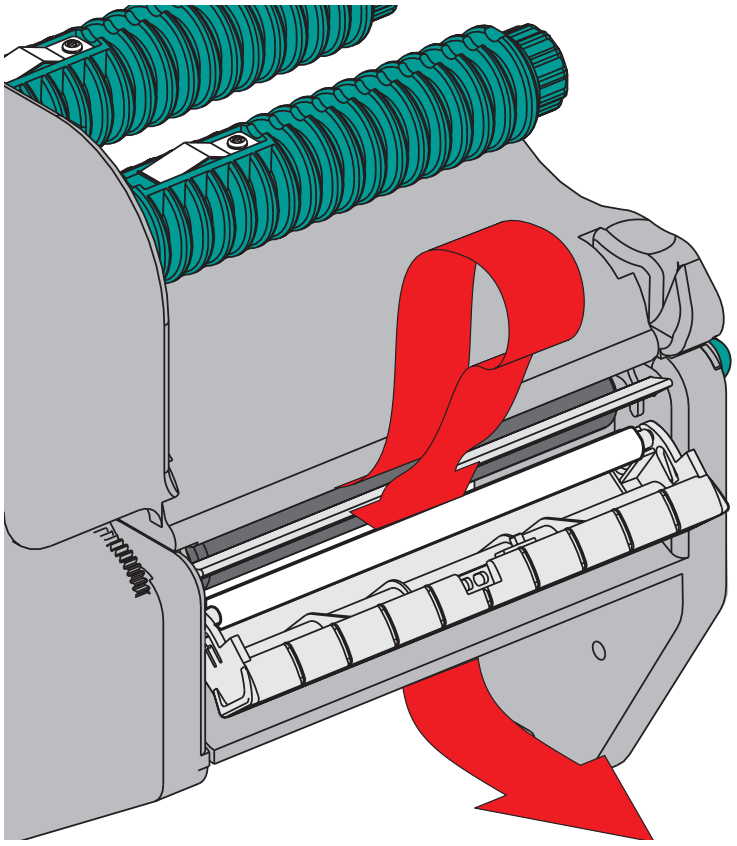
Open the Label Dispenser



Step ❺ Thread the media liner (backing) below the platen roller and above the pinch roller into the liner slot.

Thread Media Liner

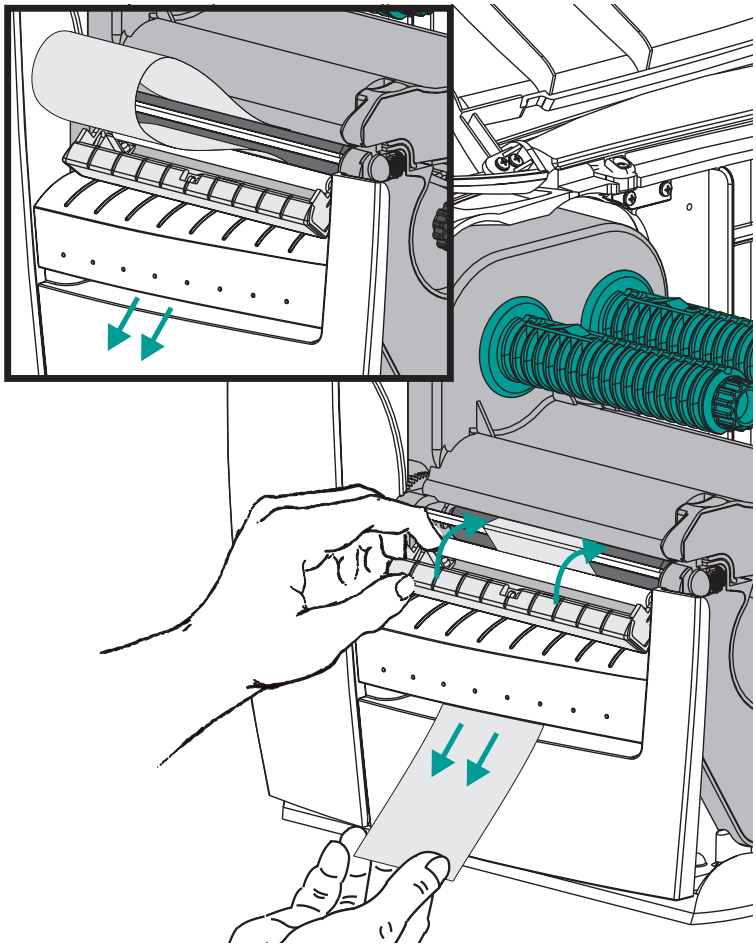
(Label Dispenser Bezel Not shown)



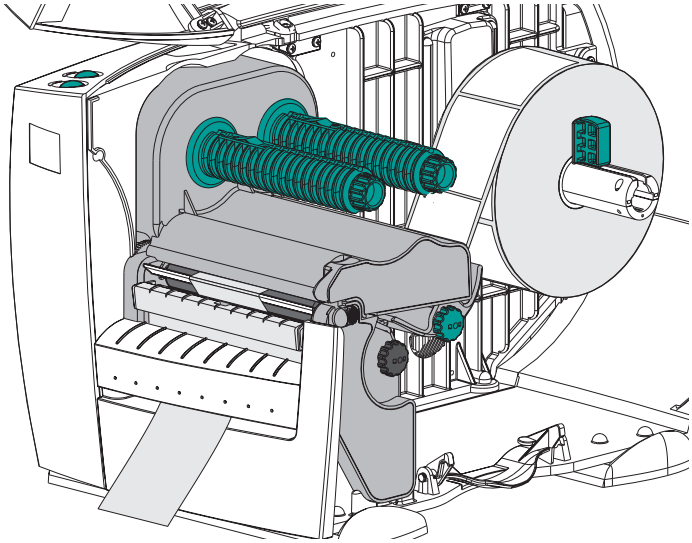
Using Label Dispense - Step ❻ Pull the liner taut and close the label dispenser. The label dispenser will snap into place.

Thread the Liner

Pull the Liner Taut



Close Label Dispenser

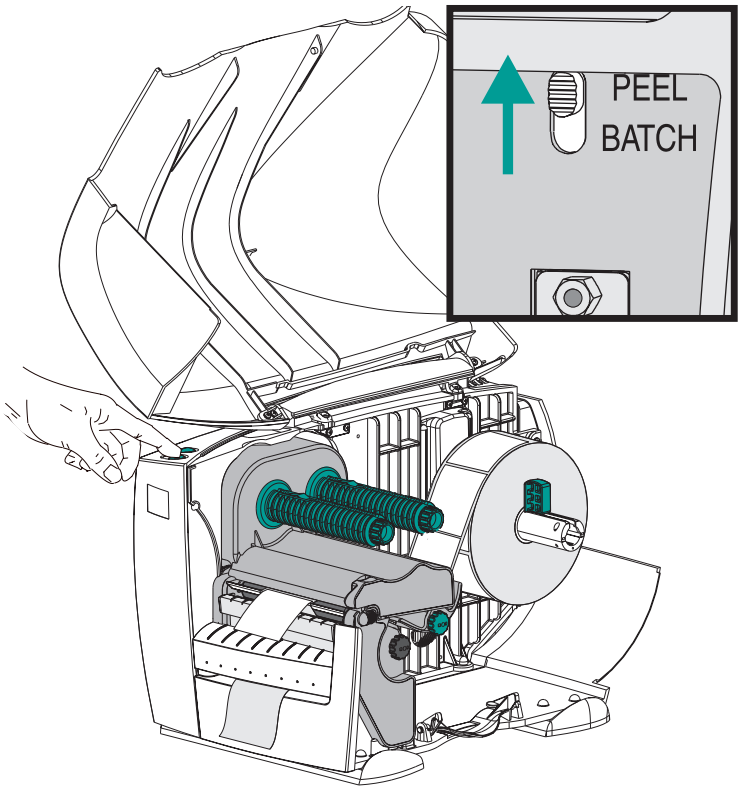


Step ❼ Change the printer mode switch to the "Peel" position at the rear of the printer. Reset the printer or cycle the power.

Switch to Peel Mode

Remove Liner Slack (Press FEED)

Remove Label

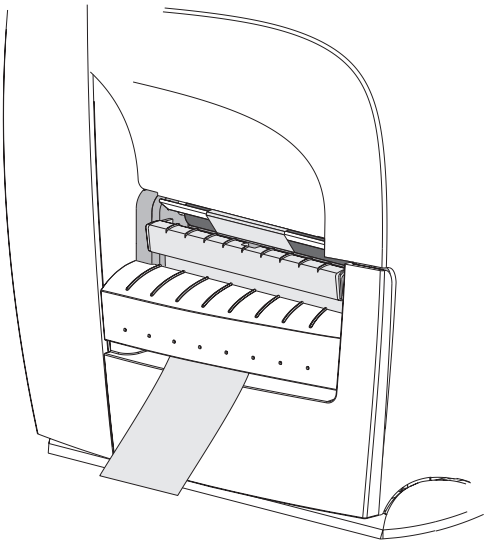


Step ❽ Press the FEED button to remove liner slack and peel a label from the liner backing. Remove the peeled label.

Step ❾ Close and latch the printer's cover.

Close Printer

Printer is Ready to Dispense Labels



Label Dispenser Removal

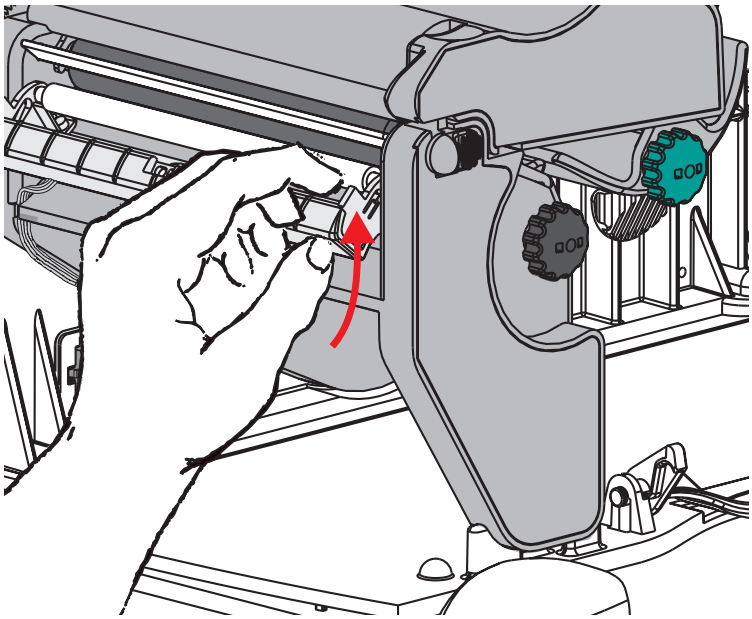
The label dispenser is designed for easy removal for cleaning and reconfiguration.

Step ❶ Disconnect the label dispenser plug. Press the release and pull it out of the socket.

Step ❷ Open the label dispenser.

Step ❸ While holding the label dispenser in the open position on the right side, push the dispenser from the bottom with a gentle steady pressure to pop it off.

Pinch, Hold and Lift Up to Remove Label Dispenser



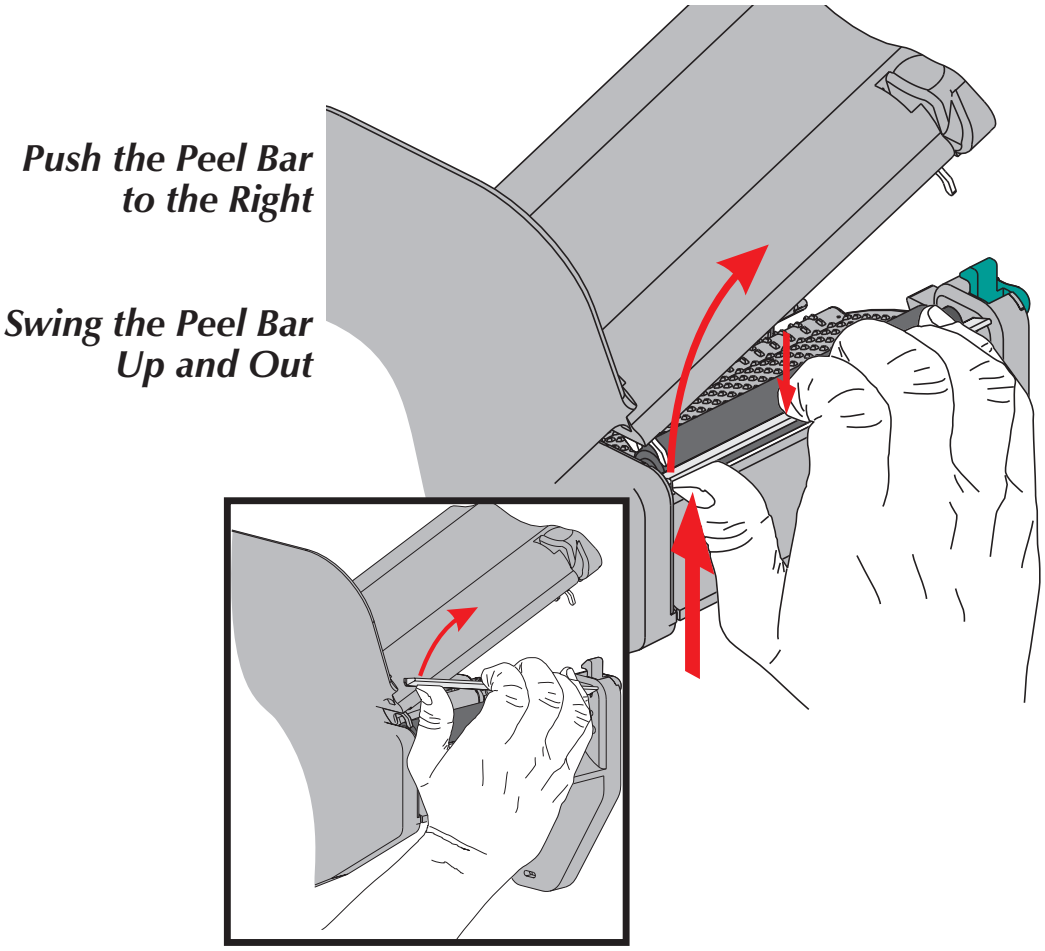
Peel Bar Removal

The peel bar is easily removed without tools. Using tools is not recommended. Personnel injury or damage to the printer could result from using screwdrivers or other sharp objects to wedge the bar out.

Step ❶ Open the print head.

Step ❷ Remove the bezel (see page 29) or label dispenser (32), if present, to allow easier access to the bottom of the peel bar.

Step ❸ Push the peel bar into the right side of print mechanism and swing the bar up and out of the bar's guide slot. Hold the printer down with the other hand. The peel bar may need some gentle downward pressure to slightly bend bar up to slip the left end past the lip.



Printing with the Label Dispenser

The printer can be programmed to print single or multiples of a single label (form). Parameter fields in the printer's Print (**P** and **PA**) commands control the print quantity of a single form (or job).

The **P** command can interact with the Counter (**C**) command to make sequencing data fields for serialization of labels. The printer also supports printing multiples of a single number and then sequencing the number. See the EPL2 programmer's for details.

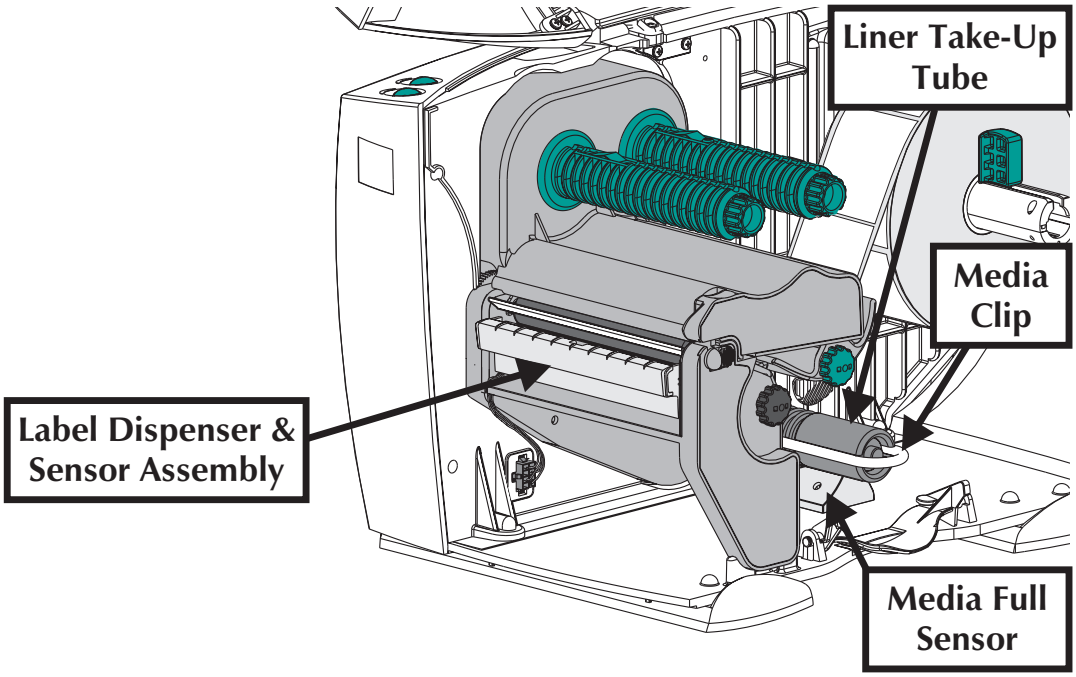
The software controlling the printer may finish printing with the printer storing the last label in buffer memory. The printer will print the first label and wait for it to be removed before allowing the second label to print.

4
Using the Liner Take-Up Option

This section provides information on the printer's liner take-up option.

Liner Take-Up Features

The liner take-up option supports liner take-up in Label Dispense (Peel) mode. The printer can wind the label liner and present peeled labels with or without the label dispenser option. Label dispensing without the label dispenser option must programmed into the printer with the **O,L** command. This configuration uses the FEED button to initiate printing.



Liner Take-Up with Automatic Label Dispense

The printer with the liner take-up mechanism and the label dispenser option can dispense a single peeled label and wind the backing in the Dispense (Peel) mode. Removing the presented label will prompt the printer to print the next label.

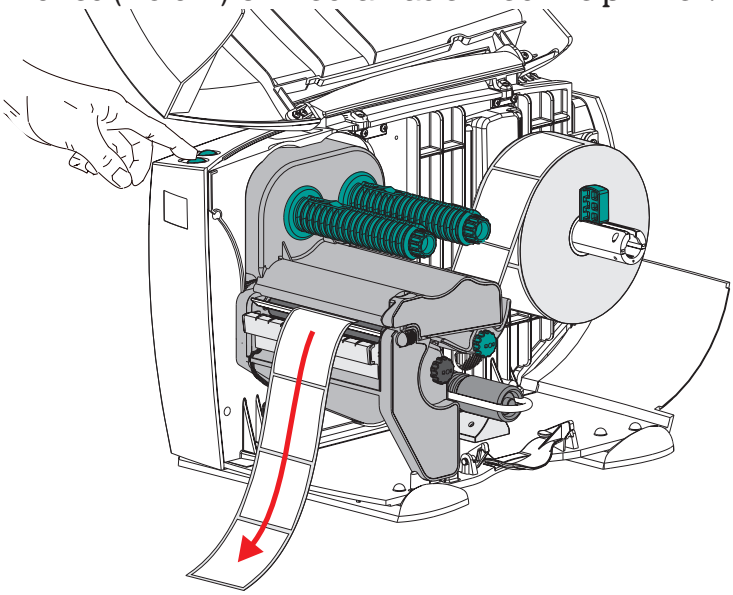
Liner Take-Up Capacity - The quantity of media liner wound will vary due to environmental conditions and liner properties.

MOVIE

Step ❶ Open the printer cover. Remove front bezel, if present. See Front Bezel Removal, page 29.

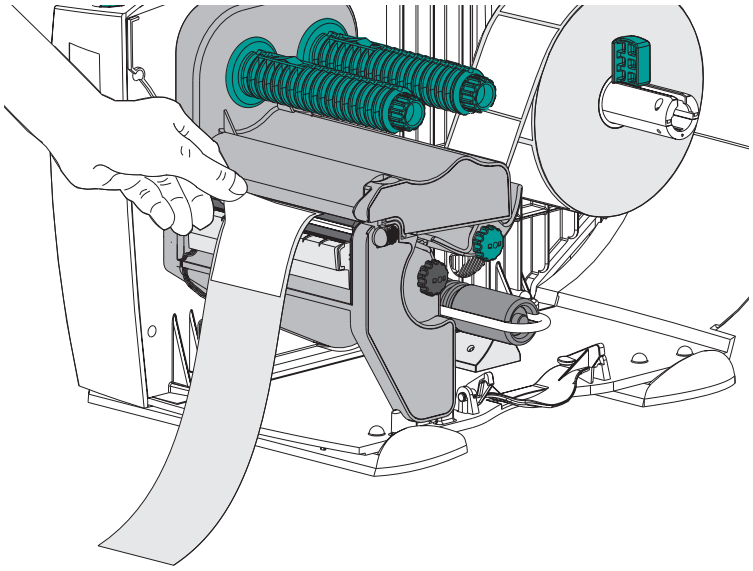
Step ❷ Load media and set media parameters (via AutoSense, see page 16, or programming with the **Q** command) in the printer.

Step ❸ Press the FEED button until approximately 16 inches (40 cm) of media has exited the printer.



Liner Take-Up Step ❹ Remove the exposed labels from the media liner (backing).

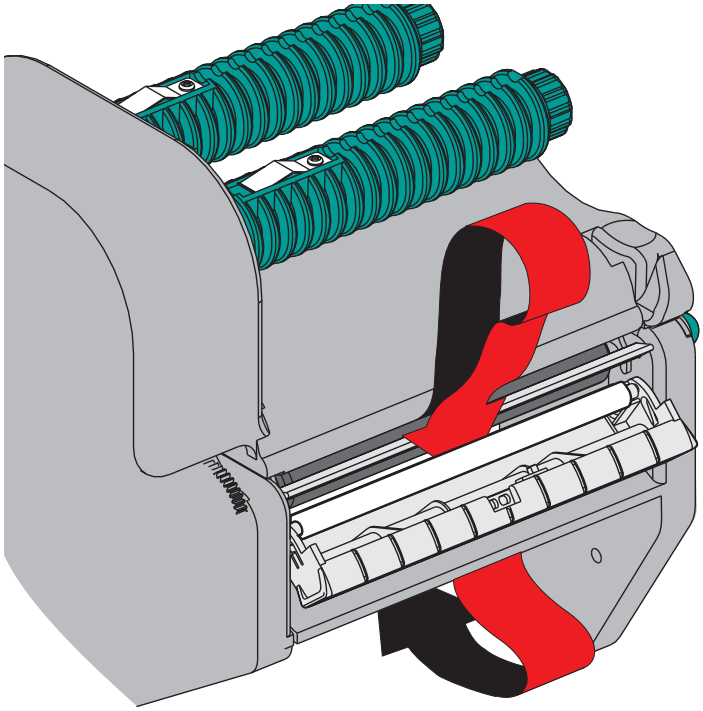
Peel Exposed Labels



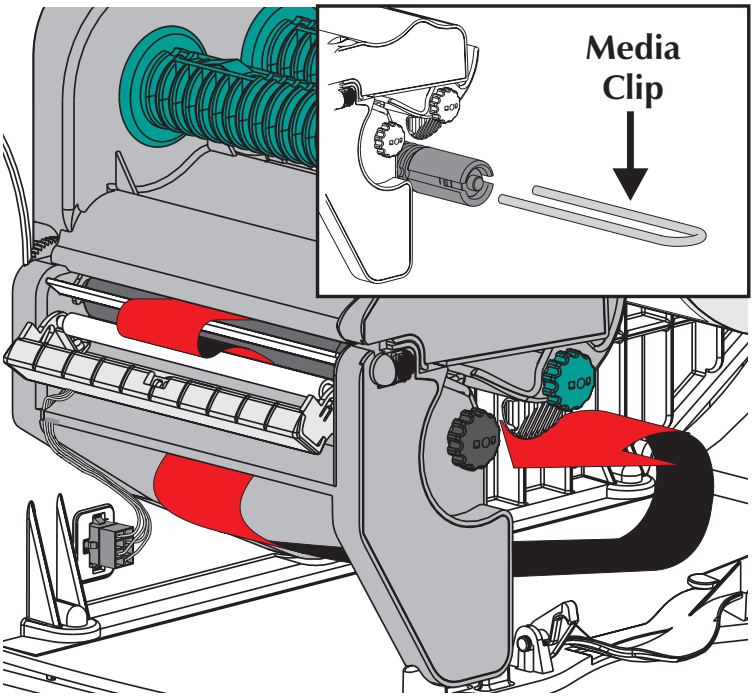
Step ❺ Open the label dispenser door. Thread the media liner (backing) below the platen roller into the liner slot.

Open the Label Dispenser

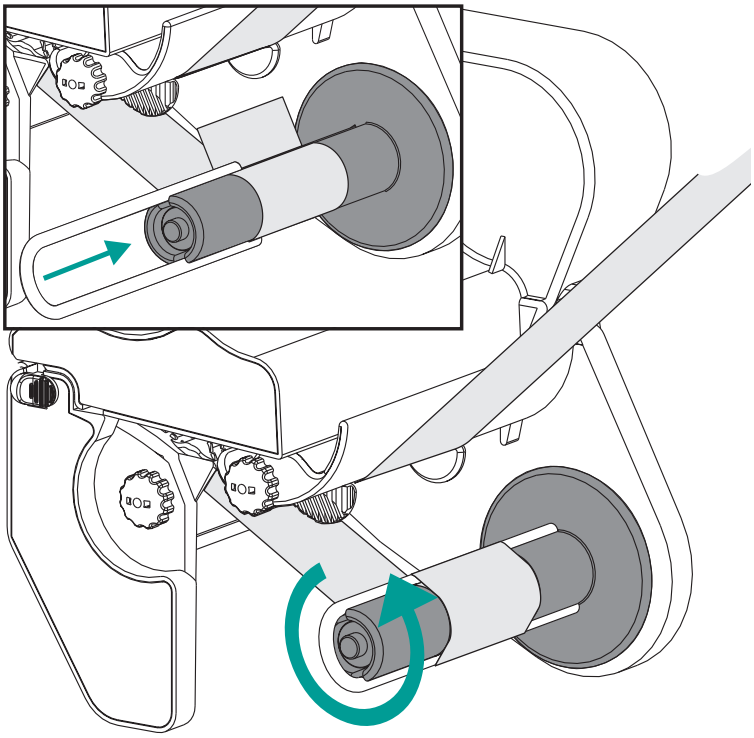
Thread the Liner



Step ❻ Remove the media clip and thread the liner under the liner take-up tube.

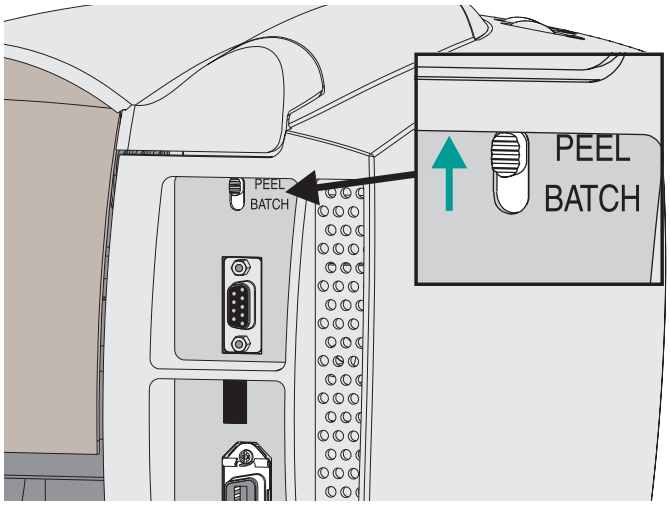


Step ❼ Attach the liner to the liner take-up tube with the clip. Turn the liner take-up tube counter-clockwise to remove liner slack.



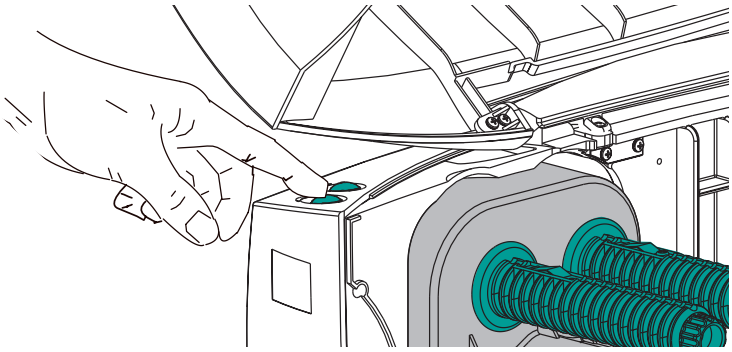
Liner Rewind Step ❽ Change the printer mode switch to "Peel" mode. Reset the printer or cycle the power.

Set Peel Mode



Step ❾ If necessary, press the FEED button to remove slack and to wind minimum of one full revolution of liner around the liner take-up tube.

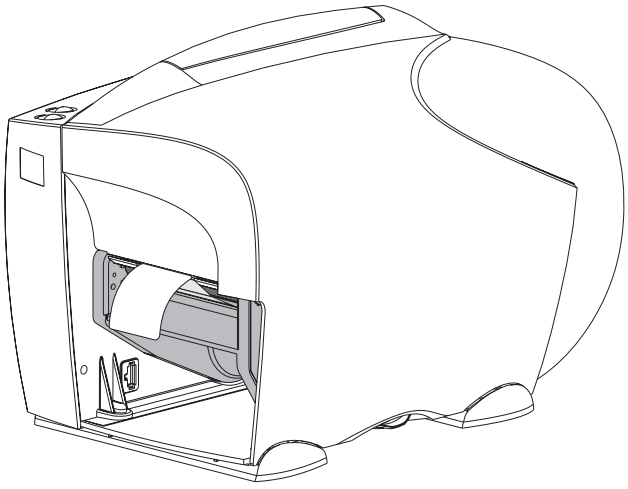
Press FEED



Step ❿ Close the printer.

Close Printer

Ready for Press and Print Label Dispense

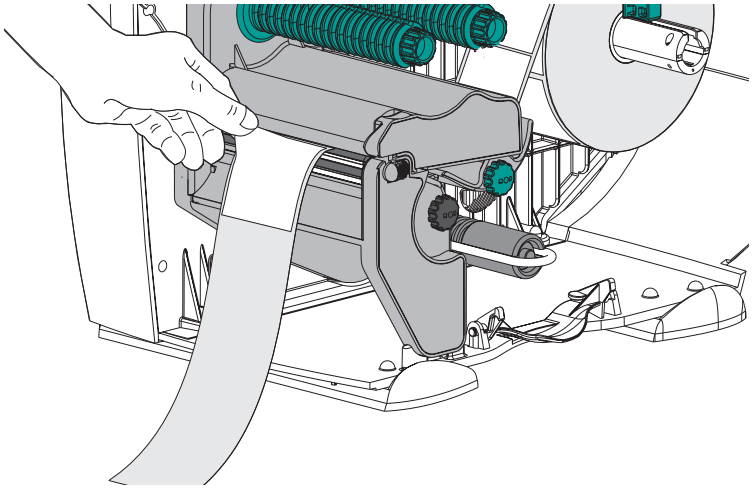


Manual Label Dispense with Liner Take-up

The printer with the liner take-up mechanism can dispense a single peeled label and wind the backing without the Label Dispenser Assembly in the Dispense (Peel) mode. Remove the presented label and press the FEED button to print the next label. This configuration must programmed into the printer with the **O,L** command.

Step ❶ Load and thread the labels, see page 8.

Step ❷ Press FEED and remove labels until approximately 16 inches (40 mm) of liner has been exposed.



Step ❸ Pull the liner under the print mechanism and liner take-up tube. Attach the liner to the liner take-up tube with the clip. Turn the liner take-up tube counter-clockwise to remove liner slack. See page 46 for more details and illustration.

Step ❹ Close the printer and press FEED to present a blank label. Remove the label.

Step ❺ Change the printer mode switch to "Peel" mode. Reset the printer or cycle the power.

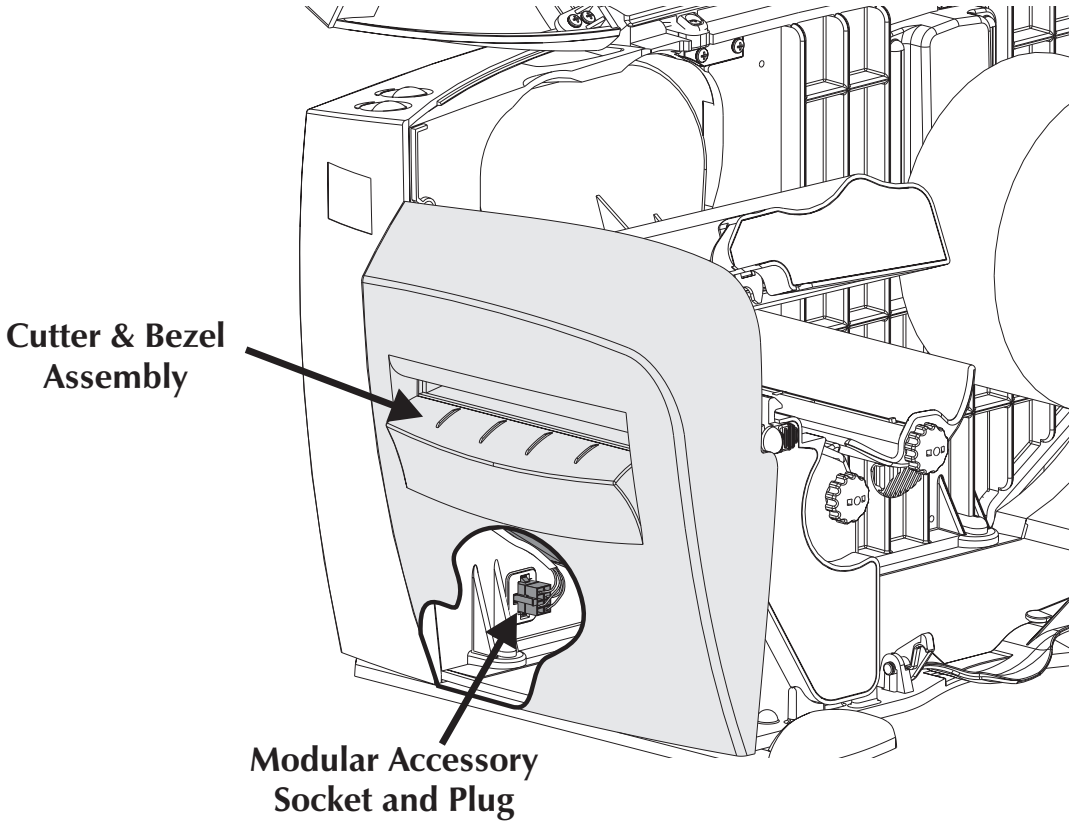
Step ❻ Send the EPL2 **O,L** command to finish configuring the printer.

5
Using the Media Cutter

This section provides information on the printer's Media Cutter option.

Media Cutter Features

Printers with the cutter option have a detachable cutter with a motorized blade. The cutter is a self cleaning tag and label liner cutter.



Cutter Guidelines

Use the media cutter to cut through continuous paper or the label liner in the gaps between labels. Never cut the portion of media that has adhesive or adhesive backing.

You can switch cutting on and off by using the **OC** command. You can set form length and gap distances by using the **Q** command. A single cut can be made anytime the printer is not printing with the **C** (Cut Immediate) command. Refer to the EPL2 programmer's manual for complete programming information.

Keep the cutter dry. Never use any solutions or solvents to clean the blade. If there is a jam, follow the steps for Clearing Cutter Jams.

Specifications

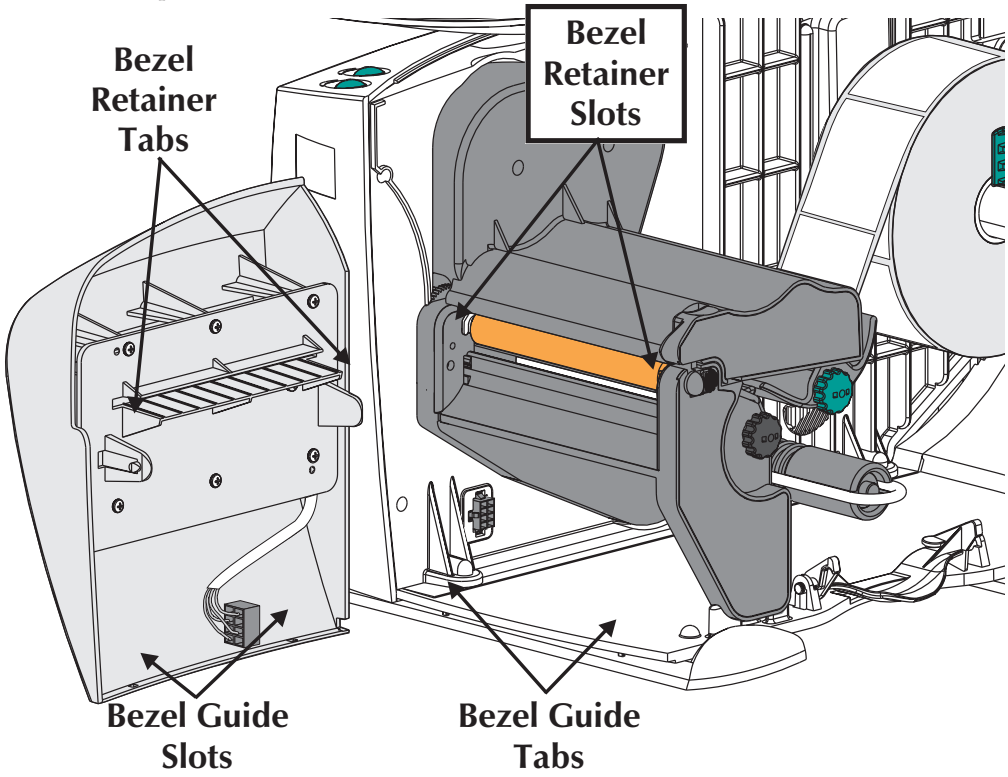
Warranty	90 Days
Mean Time To Failure (MTBF)	500,000 cut cycles
Cutting Method	Rotating, double edged blade
Media	
Media Type	Paper, Thermal Paper, Paper Tags, Paper Label Liners
Max. Density	120 grams/meter^2 (approximately 0.053 inches (0.134 mm) thick)
Min. Width	1.0 inch (25 mm)
Max. Width	4.13 inches (105 mm)

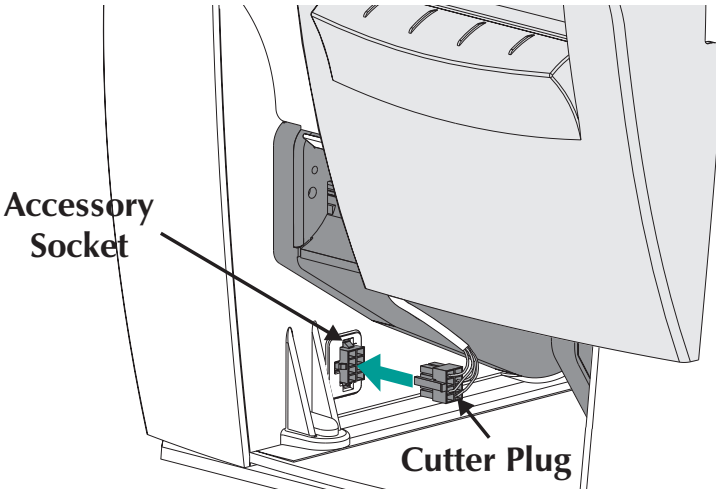
Mounting the Cutter

Use this procedure to attach cutter onto the printer.

Step ❶ Turn the power off. Remove the front bezel (and peel bar if present). See Front Bezel Removal, page 29.

Step ❷ Insert the cutter plug into the accessory socket.





Step ❸ Align and insert the bezel guide tabs to the bezel guide slots and insert. Swing the cutter bezel retaining tabs into the print mechanism's retaining slots. The cutter bezel will snap and lock into place. See "Replacing the Front Bezel", page 30, for more details.

Step ❹ Load media as required. Configure the printer for the selected media with the AutoSense routine or programming. Continuous media and black line or mark media required programming for proper configuration.

Step ❺ Configure the printer for cutting with programming or software. See the programmer's manual for details on setting or canceling cutter printer command settings.

Close the cover, if open.

Cutter Removal

The cutter bezel is removed like the standard front bezel, see page 29 for the "Front Bezel Removal" procedure.

Cleaning and Clearing the Media Cutter

The media cutter is designed to be self cleaning and sharpening. Occasionally, the cutter needs to have a cleaning cycle of 5 cuts to clean and sharpen the blade. This cleaning should be after use and prior to new periods of use. This is the only approved method for cleaning the cutter blade. Do not use solutions or solvents to clean the blade.

A single cut can be made anytime the printer is not printing with the **C** (Cut Immediate) command. Refer to the EPL2 programmer's manual for complete programming information.

Clearing Cutter Jams

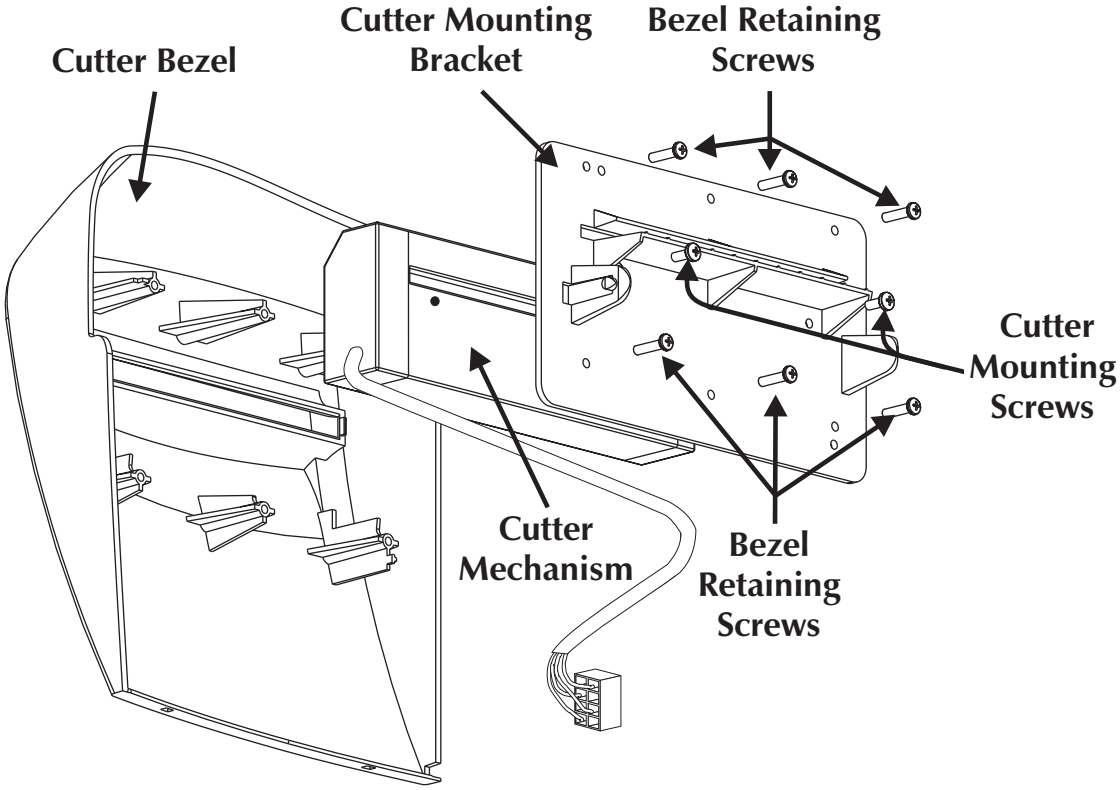
Always turn the printer power off. The only tool required to clear a jam is a pair of small tweezers. Never use your fingers or sharp objects to clear jams.

If you cannot remove the jammed media with tweezers, the media cutter may be opened.

Step ❶ Remove the media cutter assembly.

Step ❷ Remove the six (6) cutter bezel retaining screws on the back of the media cutter assembly.

Step ❸ Remove the two (2) screws holding the cutter mechanism to the cutter mounting bracket.



Step ❹ Clean the cutter bezel and mounting bracket as required. Do not clean the cutter mechanism with any liquid or moistened material!

Step ❺ Reassemble the cutter assembly and then remount the media cutter.

6
Miscellaneous Printer Options

This section provides information on the printer options that do not require physical interaction by the operator to configure or use.

Factory Installed Printer Options

The following options are factory installed options. They can not be added in the field.

- Liner-free Label Printing (Non Stick Platen Roller)
- Real Time Clock (RTC)
- Asian Language Printing
- 300 dot per inch print resolution
- RS-422 Serial Port Interface (See Appendix A)

Add-On Options

The following options can easily be added to provide added features to your printer.

- Keyboard Display Unit (KDU) - Used for stand alone printer operation.
- Eltron PrintServer - Ethernet/LAN adapter

Liner-free Media Printing

Liner-free printing utilizes a special platen roller and media path design for tear and print labeling applications. The unique liner-less media is normally a roll of continuous media. Liner-free printing allows the programmer to provide variable lengths of labels without changing the media roll.

Liner-free printer's require more frequent cleaning of the media path, platen roller and print head due to accumulation of small amounts of adhesive. See Section 2 for more details on printer maintenance procedures.

Real Time Clock Features

The printer's Real Time Clock has a ten (10) year, self contained battery power source. The time and data are adjustable, including the displayed format. The use, access and configuration of the Real Time Clock is done through software or programming. See the EPL2 Programmer's manual for more details.

Checking for Time & Date

Use the printer's AutoSense procedure to generate a Dump Mode (status) printout. A printer **U** command will also print a Dump Mode status printout.

RTC Dump Mode Status Information:

- Use it to check for the RTC option in printer. When time and date are displayed, it shows the presently set Time & Date and that the RTC is installed in the printer.
- Display presently set Time & Date.

Programming with the Real Time Clock Option

The list below is for quick reference when programming the RTC option features:

- **TS** - Set Time & Date
- **TT** - Define Time Layout as a command or Insert Time Function as a variable in a "DATA" field.
- **TD** - Define Date Layout as a command or Insert a Date Function as a variable in a "DATA" field.
- **A** - ASCII or Asian (double byte ASCII text) as a variable function within the "DATA" string.
- **B** - Bar Code as a variable function within the "DATA" string.
- **Simple Math Functions** as part of the **A** (text) or **B** (bar code) commands.

See the EPL2 Programmer's manual for more details.

Asian Language Printers

The Asian language capable printer supports one of the three (3) available Asian languages: Chinese, Korean or Japanese. The Ht-146 Asian printer, offered as a factory option only, requires a special PCBA with additional memory to support the large pictographic Asian character sets. The standard Eltron character sets are also supported by these printers. See the EPL2 Programmer's manual for more details.

High Resolution 300 dpi Printers

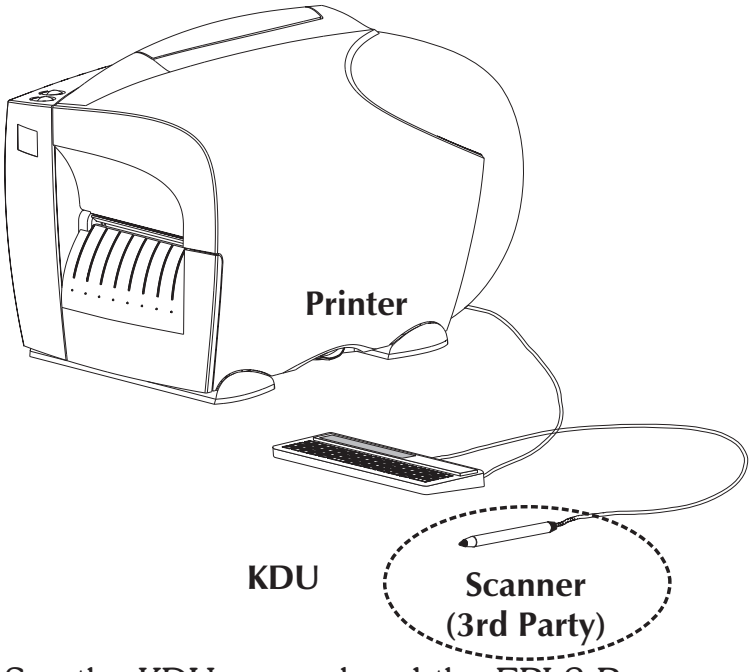
The high resolution 300 dots per inch printing is available as a factory option only.

When programming, be aware that the 300 dpi printer has 11.8 dots per millimeter verses the 8 dots per millimeter of the standard 203 dpi printer. Multiply all 203 dpi dot measurements (command parameters) by 1.5 to recreate existing label formats. External graphics or logos (PCX files) must be recreated or scaled to 1.5 times the original dot size to remain the same size.

Keyboard Display Unit (KDU)

The Keyboard Display Unit allows the operator to print label formats previously stored into the printer's flash memory. The operator can call forms to print to type or scan data. The KDU has a scanner serial port for including a third party scanning device.

KDU Setup



See the KDU manual and the EPL2 Programmer's manual for details.

The KDU supports multiple languages.

Eltron PrintServer

The Eltron PrintServer is a 10Base-T Ethernet adapter that includes a suite of IT management and installation tools. The Eltron PrintServer will work on networks that utilize TCP/IP and/or IPX protocols.

Eltron PrintServer Supports:

- TCP/IP and IPX protocols
- Windows™ 95/98
- Windows™ NT
- Netware
- Peer to Peer Networking
- HP JetAdmin
- SNMP

See the Eltron PrintServer data sheet and the installation and operator's guide at the Eltron web site (http://www.eltron.com) or on the printer's software and documentation CDROM for this printer.

Appendix A
Troubleshooting

This section addresses the most common issues you may face with operation, maintenance and configuration of the printer.

Where to Start Your first troubleshooting reference source is the Common Problems Troubleshooting table on the following page.

Common Printing Problems Troubleshooting Guide

Problem	Solution or Reason
Status indicators do not light with printer power ON (=1).	1. Check power connections from the printer to the outlet.
With the POWER indicator GREEN, the printer appears to be working, but nothing is printed.	1. Verify that the labels are the correct type. 2. Check the roll and verify that the print surface faces up for printing. 3. Check that the transfer ribbon is correctly routed and has the ink side out for thermal transfer printing, only.
Printing stops and the indicators are: Power - Off Error - Amber	1. Check for Out-of-Media or Ribbon condition, missing labels in the middle of a roll, ribbon damage or label jam. 2. Possible problem sensing labels. a) For labels, verify the reflective sensor (light source with red dot) is positioned under the Transmissive sensor. b) Perform AutoSense adjustment. 3. Possible problem with media. a) Gap between the bottom of a label and the top of the next label should be at least 1/16" (1.6mm). b) For tags, see Gap and Index Hole Sensing Range, page A-70. c) Use only Eltron approved labels and tags. 4. Possible software/programming problem. Refer to the EPL2 Programming manual for the correct data syntax.
The printer has issued a command and the indicators are: Power - Off Error - Amber	1. Media is not loaded or properly loaded. 2. When direct thermal printing, verify that the programmed mode (or printer driver) is set for direct thermal printing. See the programmer's manual for details. The printer maybe detecting the absence of transfer ribbon.

Problem	Solution or Reason
The printer has issued a command, media moves and then stops. The indicators are: Power - Green Error - Amber	1. Verify that the adjustable reflective media sensor is correctly positioned to detect an inter label gap, index holes (notches), or black marks (stripes). See page 15 for sensor location and setting. 2. Not detecting label gaps properly. Perform AutoSense.
Printing is faded or poor quality.	1. Clean the print head with cleaning pen. 2. Adjust print speed/darkness in software or with programming. 3. Check the roll and verify that the media print surface is facing up. 4. Verify that the correct combination thermal transfer ribbon and media are in use. 5.- The print head life may have been exceeded if quality is still poor after cleaning, see Print Head Replacement on page 78.
Printer cuts (melts) through the transfer ribbon. The ribbon is advancing normally, i.e. at the same rate as the media.	1. Verify the density (heat) setting. If this is unknown reduce setting several levels the until the transferred ink is clear and the ribbon is not damaged. 2. Verify that the correct media is in use. 3. Verify that the ink (transfer material) side is out on the transfer ribbon roll.
Label Dispense Mode: Printing does not stop between labels.	1. The Peel/Batch switch in the rear of the printer is not set to peel. 2. The dispenser door is open (down position).
Label Dispense Mode: Prints one label and stops.	1. Programming - Verify the quantity has been correctly set.
Cutter Option: Cutting labels instead of cutting between labels.	1. Programming - Verify form length setting. 2. Check that peel switch is in the "batch" position (towards outside of printer).

Other Support Resources

Your first troubleshooting reference source is the table on the previous page. Next, contact the dealer where you purchased your printer.

Zebra Technologies also provides a variety of information and user support services:

- **Internet:**
  http://www.eltron.com

  e-mail:
  Label Printers: techsup@eltron.com
  Europe: eurosup@eltron.com
  Singapore: asiasup@eltron.com
  Latin America: latinsup@eltron.com

- **Customer Service:** +1 (800) 344 4003
  For the name of a dealer in your area.

- **Technical Support FAX**:
  USA: +1 (805) 579 1808
  Asia: +65 84 20 366
  Europe: +44 (0) 1189 895 762
  Latin America: +1 (847) 584 2725
  For your assistance and support with Eltron printers and software.

Printer Configuration Settings

The printer has flash (non-volatile) memory to store printer configuration settings. The settings are stored in flash memory and are set by programing, printer drivers or the AutoSense routine. The settings are shown on the Dump mode printout or can be reported back to the host via the serial port.

The following are the basic settings stored in the printer:

Print Mode - Direct (**OD**) or Thermal Transfer (**O**)
Speed (**S**)
Density (**D**) or heat applied
Form (label) length and gap in dots (**Q**)
Form (label) width in dots (**q**)
Serial Port (**Y**)
Margin (**R**)
Buffer Mode (**r**)

Options: **D**
Print Mode is Direct Thermal (**OD**)

Dump Mode Printout

(See the **U** command in the Programmer's manual for details)

```
4" Is-237   V4.03.08     036
Serial port:96,N,8,1
Page Mode 200dpi
Image buffer size:0245K
Fmem:000.0K,061.4K avl
Gmem:000K,0585K avl
Emem:008K,0585K avl
I8,0,001 rY
S8 D07 R032,000 ZT UN
q0768 Q1016,024
Option:D
15 17 20
```

Media

The two types of printing methods supported by the Ht-146 printer family are direct thermal and thermal transfer. Direct thermal media is chemically treated to produce print without a ribbon. Thermal transfer printing uses heat to transfer wax, resin or a combination of both from the transfer ribbon to the media.

The printer is set by default to direct thermal printing. Set the printer to thermal transfer mode to activate a ribbon out sensor.

Media Sensing

The printer is equipped with a transmissive (gap) sensor, reflective (black mark) sensor, and a reflective ribbon out sensor. The transmissive and ribbon out sensors are fixed position sensors. The reflective sensor is adjustable. Printers with the label dispense option, have a reflective (label taken) sensor.

The transmissive (gap) sensor is set by AutoSense and it adjusts the sensitivity and detection levels for the media in use. The transmissive sensor also detects the media out condition. The sensor's light source comes from the adjustable reflective sensor when set immediately below the gap sensor (under the media).

The reflective (black mark) sensor senses light (media) and dark (black marks) on the media backing (or liner). The reflective sensor is adjustable from a near center position to the outside edge of the media (towards the inside wall).

The ribbon out sensor reflects light off the ribbon's reflective end marker (trailer). When ribbon is present (and unused), the light is stopped.

The label taken sensor detects light reflected from a peeled label waiting to be removed.

Reflective Sensor Positioning

The printer has a moveable sensor to detect black lines (or marks) or index holes (or notches) from the back side of the media. The sensor includes a red targeting light for ease of use. The sensor should be centered on the black mark or index hole (or notch). Move the sensor position by turning the black adjustment knob on the lower print mechanism. Typically, the media does not require a sensor position adjustment.

Top Of Form Sensing

To accommodate different media and media dimensions, your printer is equipped with sensors capable of detecting the top of form for labels or tags. Two methods are used by the printer for top of form sensing: gap sensing and black mark sensing.

Gap Sensing

The gap sensing feature depends on the ability of the transmissive (gap) sensor to "see through" the label liner between labels. Label and label backing opacity vary due to manufacturing differences in label stock. The sensor may have difficulty distinguishing the difference between labels and the liner. This may require the user to AutoSense the media. Set the gap sensor's sensitivity with the AutoSense feature. Verify that the reflective sensor's position (note the red light) is immediately below the transmissive (gap) sensor. For all gap sensing operations, the sensor must be in this position.

Black Mark Sensing

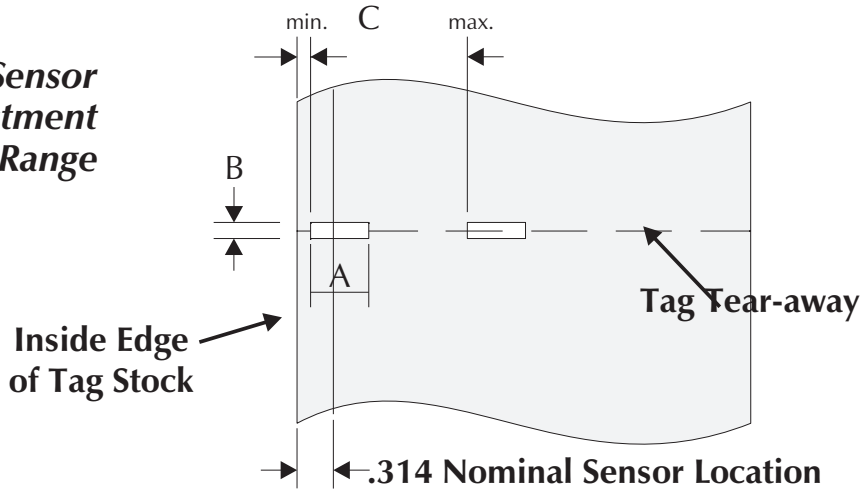
The black mark uses a reflective (black mark) sensor to detect a black line (mark) on the media backing. The black mark sensor is used with special labels that have a black mark printed on the back of the label liner or tag between each label or tag. When printing with black mark media, the sensor does not need to be aligned with the upper transmissive (gap) sensor to work and can be moved.

Black Mark and Index Hole Sensing Range

The reflective sensor's position is indicated by a red light that is visible through the media with the print head open. The sensor can be moved by rotating the black knob on the lower portion of the print mechanism. For proper sensing, ensure that the sensor is aligned with the center portion of the black mark or index hole/notch.

The following dimensions show the required position of the index hole or notch on tag stock .

Sensor Adjustment Range



Dimension	Min.	Max.	Nominal
A	.236"	None	.512"
B	.079"	.512"	.118"
C	.098"	1.520"	N/A

Print Head Life

The print head has a limited life and is considered a consumable item. The media rubs across the print head print elements and wears away the surface. This process is affected by many factors relating to the media material, operational settings and environment.

Serial Interface Communication Configuration

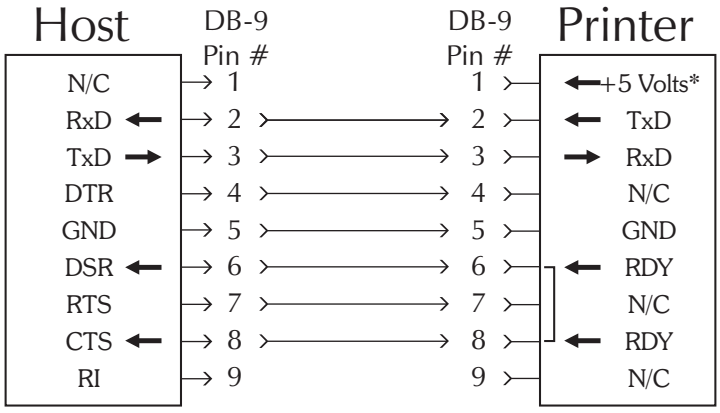
The printer's serial port is configured with the **Y** command for the printer. The printer supports interface data rates from 1200 to 38,400 baud. See the EPL2 programmer's manual for details.

The printer's serial port default configuration is:

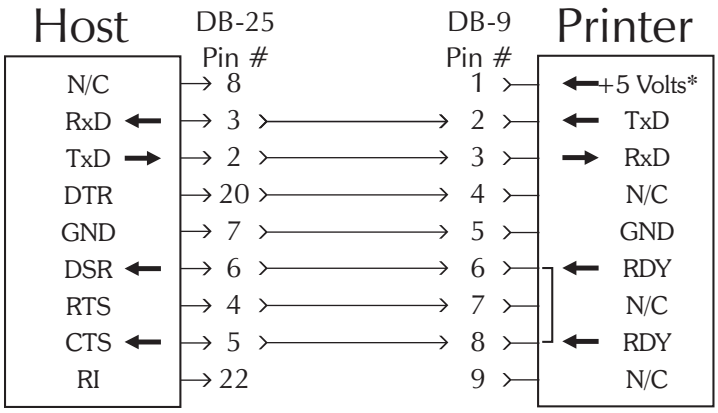
9600 baud
8 bit data
1 stop bit
No parity

RS-232 Serial Interface Cable Wiring

The figure below displays the cable wiring required to use the printer's serial interface.



Female DB-9 to Male DB-9

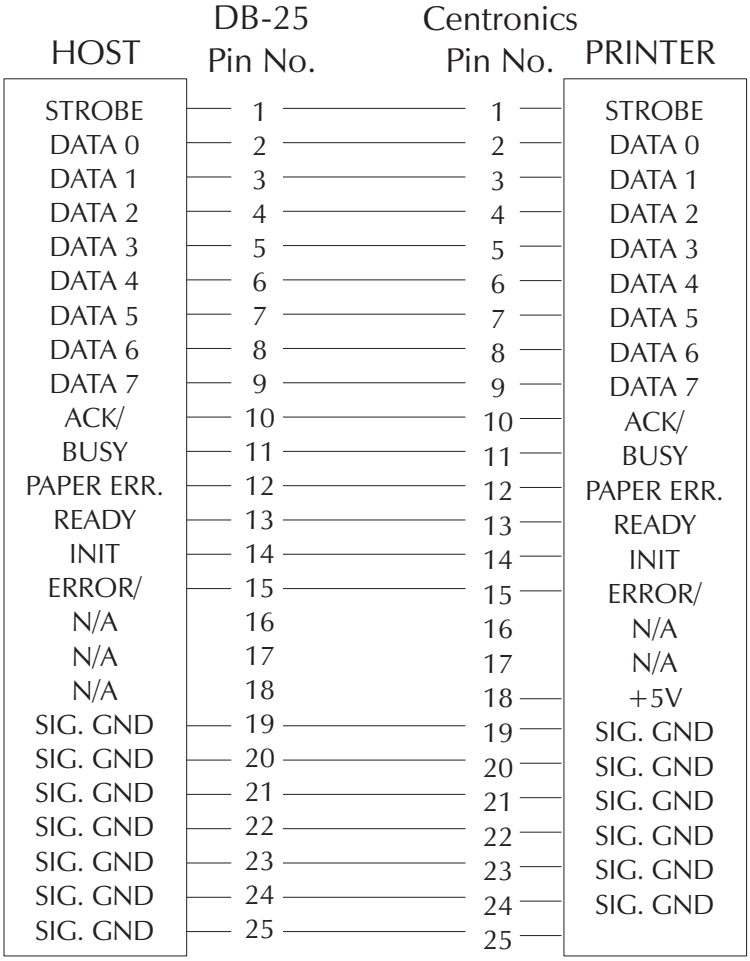


Female DB-25 to Male DB-9

*+5 volts at 150 mA for external device (e.g. KDU or scanner)

Parallel Interface Cable Wiring

The figure below displays the cable wiring required to use the printer's Centronics parallel interface.


HOST
DB-25 Pin No.
Centronics Pin No.
PRINTER
STROBE 1 1 STROBE
DATA 0 2 2 DATA 0
DATA 1 3 3 DATA 1
DATA 2 4 4 DATA 2
DATA 3 5 5 DATA 3
DATA 4 6 6 DATA 4
DATA 5 7 7 DATA 5
DATA 6 8 8 DATA 6
DATA 7 9 9 DATA 7
ACK/ 10 10 ACK/
BUSY 11 11 BUSY
PAPER ERR. 12 12 PAPER ERR.
READY 13 13 READY
INIT 14 14 INIT
ERROR/ 15 15 ERROR/
N/A 16 16 N/A
N/A 17 17 N/A
N/A 18 18 +5V
SIG. GND 19 19 SIG. GND
SIG. GND 20 20 SIG. GND
SIG. GND 21 21 SIG. GND
SIG. GND 22 22 SIG. GND
SIG. GND 23 23 SIG. GND
SIG. GND 24 24 SIG. GND
SIG. GND 25 25

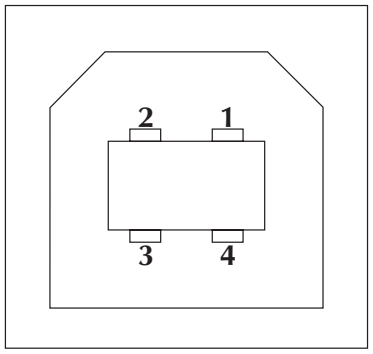
Female DB-25 to Male Centronics (Cable)

+5 volts at 300 mA for external device (e.g. PrintServer)

USB Interface Cable Wiring

The figure below displays the cable wiring required to use the printer's USB interface.

USB Connector



Pin	Signal
1	Vbus - N/C
2	D-
3	D+
4	Ground
Shell	Shield / Drain Wire

For printer supported operating systems and USB drivers, see the software and documentation CD or visit the Eltron printer web site at:

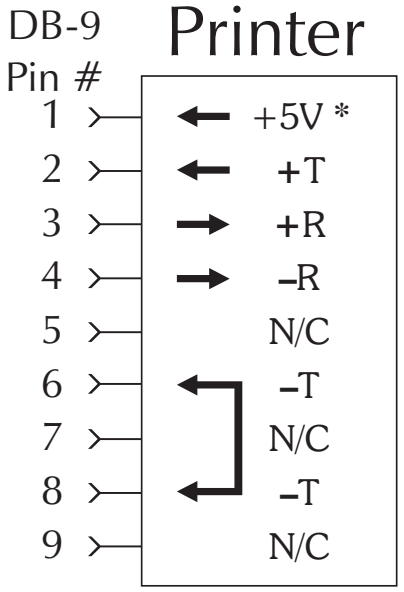
http://www.eltron.com

For information on the USB interface go to the USB web site, at:

http://www.usb.org

Printer Option: RS-422 Serial Interface Cable Wiring

The figure below displays the cable wiring required to use the printer's optional RS-422 serial interface.



*+5 volts at 150 mA for external device

Appendix B
Supplies and Accessories

Accessories available for the printer are listed below. Always refer to the ELTRON part number when placing an order. For the name of an Eltron brand dealer in your area, call: 1(800) 344-4003 (or 1 (805) 579-1800) for the nearest Zebra Technologies office (located on the back of this manual).

Description	Part Number
Parallel Interface Cable, 6’ Parallel Interface Cable, 10’ Serial Interface Cable, 6’ (DB-9 to DB-9) Serial Interface Cable, 10’ (DB-9 to DB-9) Serial Interface Cable, 6’ (DB-25 to DB-9) USB Interface Cable, 6' (A to B) USB Interface Cable, 10' (A to B)	300016-006 300016-010 300017-006 300017-010 300018-006 300283-001 300283-010
KDU (Keyboard Display Unit) Eltron PrintServer	120181-001 46696
Label Dispenser Kit (with peel bar and bezel) Peel Bar Media Cutter	105915-101 105915-015 105915-111
Desktop Printer Software & Documentation CD which includes: Printer Driver and Create-A-Label 3 for Windows User’s & Programmer’s Manuals Utilities and Miscellaneous Documentation	105551-005

Appendix C
Print Head Replacement Procedures

The following section has print head evaluation information and print head replacement procedure.

Warning - Static Discharge - The discharge of electrostatic energy that accumulates on the surface of the human body or other surfaces can damage or destroy the print head or electronic components used in this device.

DO NOT TOUCH the print head or the electronic components under the print head assembly accept during replacement.

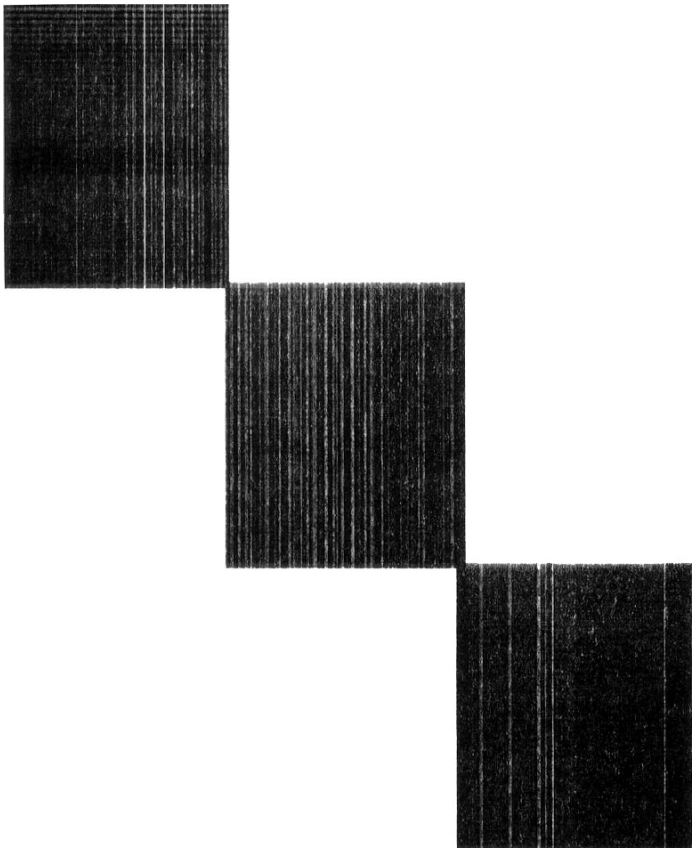
Prepare a static-safe work area for repair. The area must include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for the technician. ESD protective devices are available from most electronic supply stores or by contacting 3M corporation at (800) 328-1368.

Identifying Print Head Problems

The print head wears with printer use. If the print quality does not improve after cleaning, the print head may require replacement. Printing with worn damaged print elements may create unreadable bar codes. The following are examples of print head wear or damage.

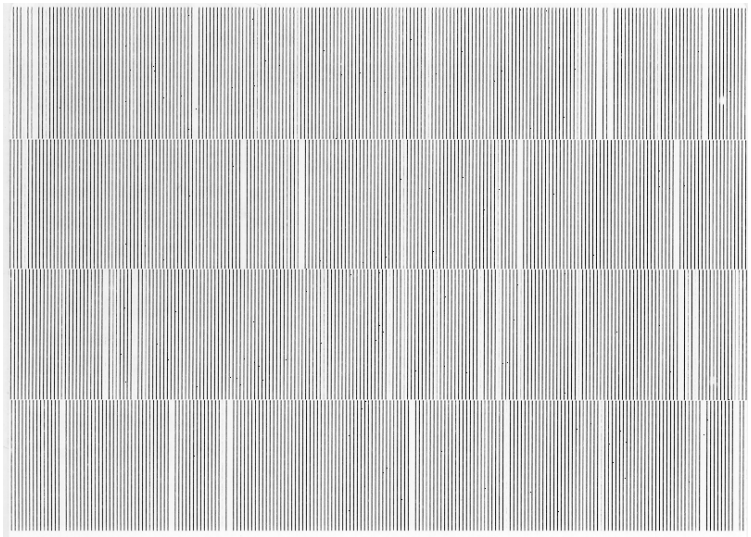
Weak or Damaged Print Elements

(Full-On Print Pattern)

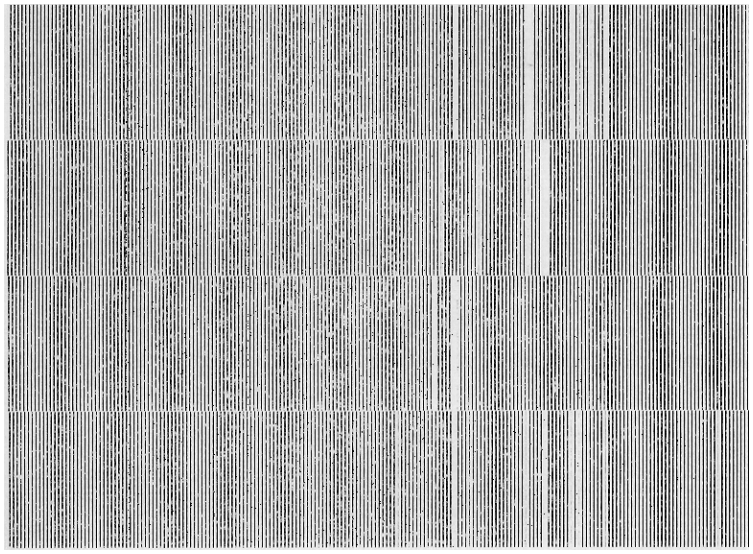


Weak or Damaged Print Elements or Print Logic

(Rotating Print Element Pattern)



Print head damage can be caused by: improper cleaning with unapproved fluids or implements, electro static discharge (ESD), and touching the print head (contaminates, ESD and body oil acids).

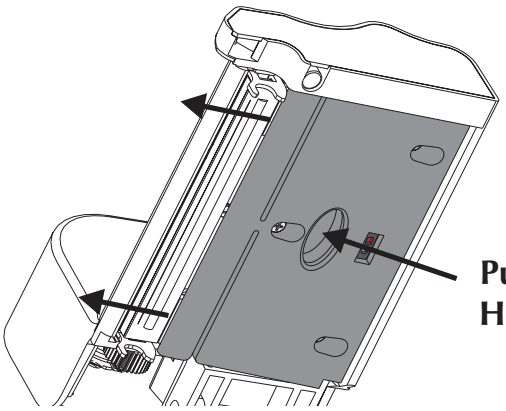


Print Head Replacement

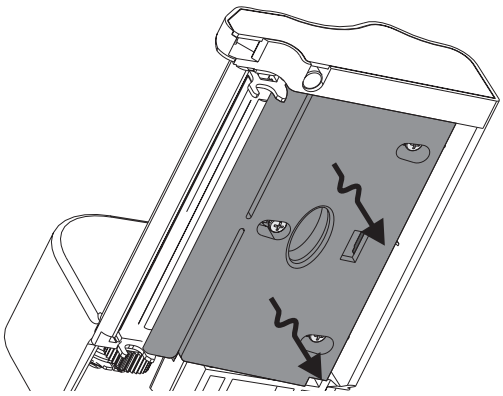
Step 1 **Turn printer power off.** Open the print head. Remove any thermal transfer ribbon, if present.

Step 2 Remove the print head shroud. Slide the shroud forward to detach (unsnap) it from the print head mechanism.

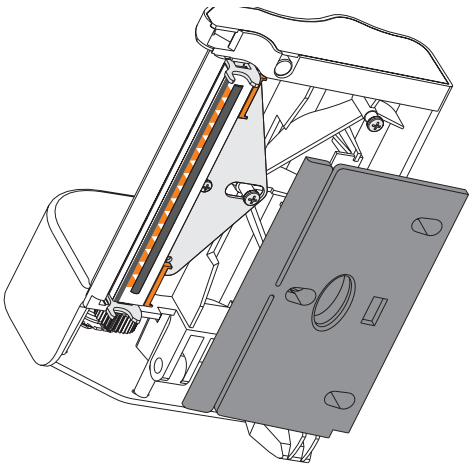
Slide Shroud Forward



Wiggle the Shroud

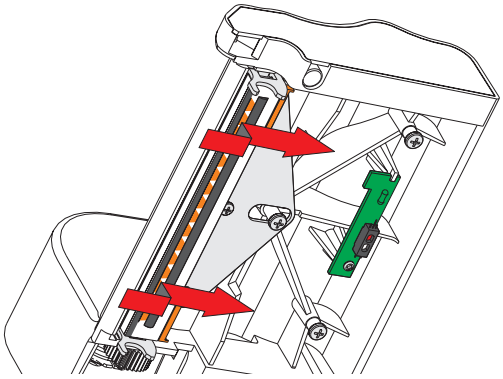


Set Shroud Aside

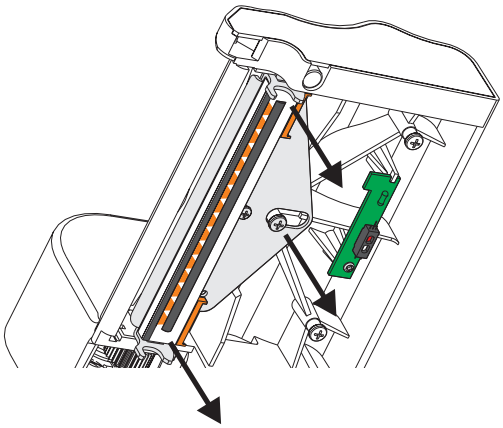


Step 3 Push the print head up into the print mechanism and slide it to the back of the printer.

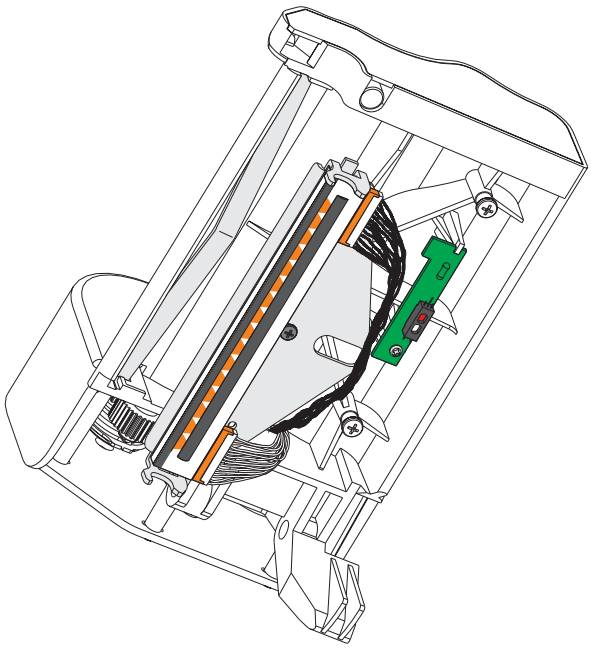
Push The Print Head Bracket to the Back
(Cables Not Shown)



Spring Action Pops Bracket Out

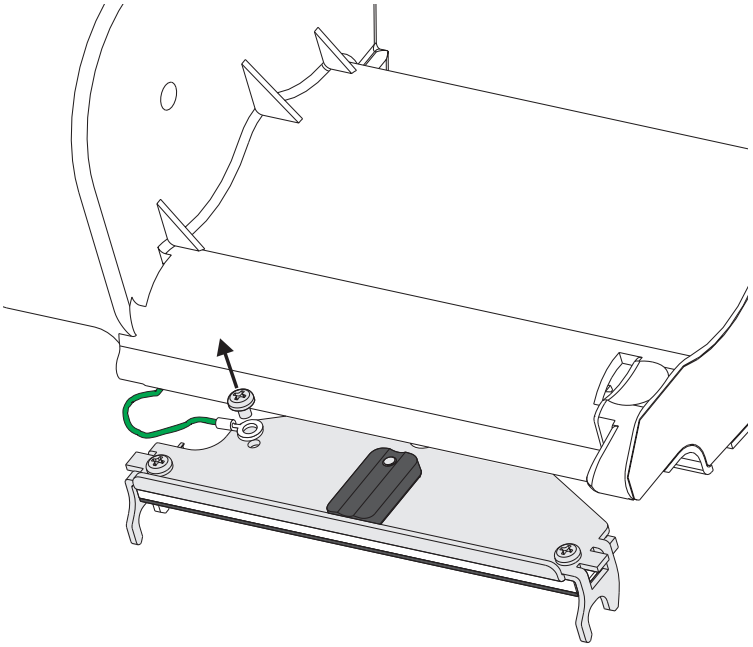


Step 4 Disconnect the print head cables. Avoid pulling the cables.



Step 5 Disconnect the ground wire lug on the top of the print head bracket with a Philips screwdriver. Discard old print head and bracket.

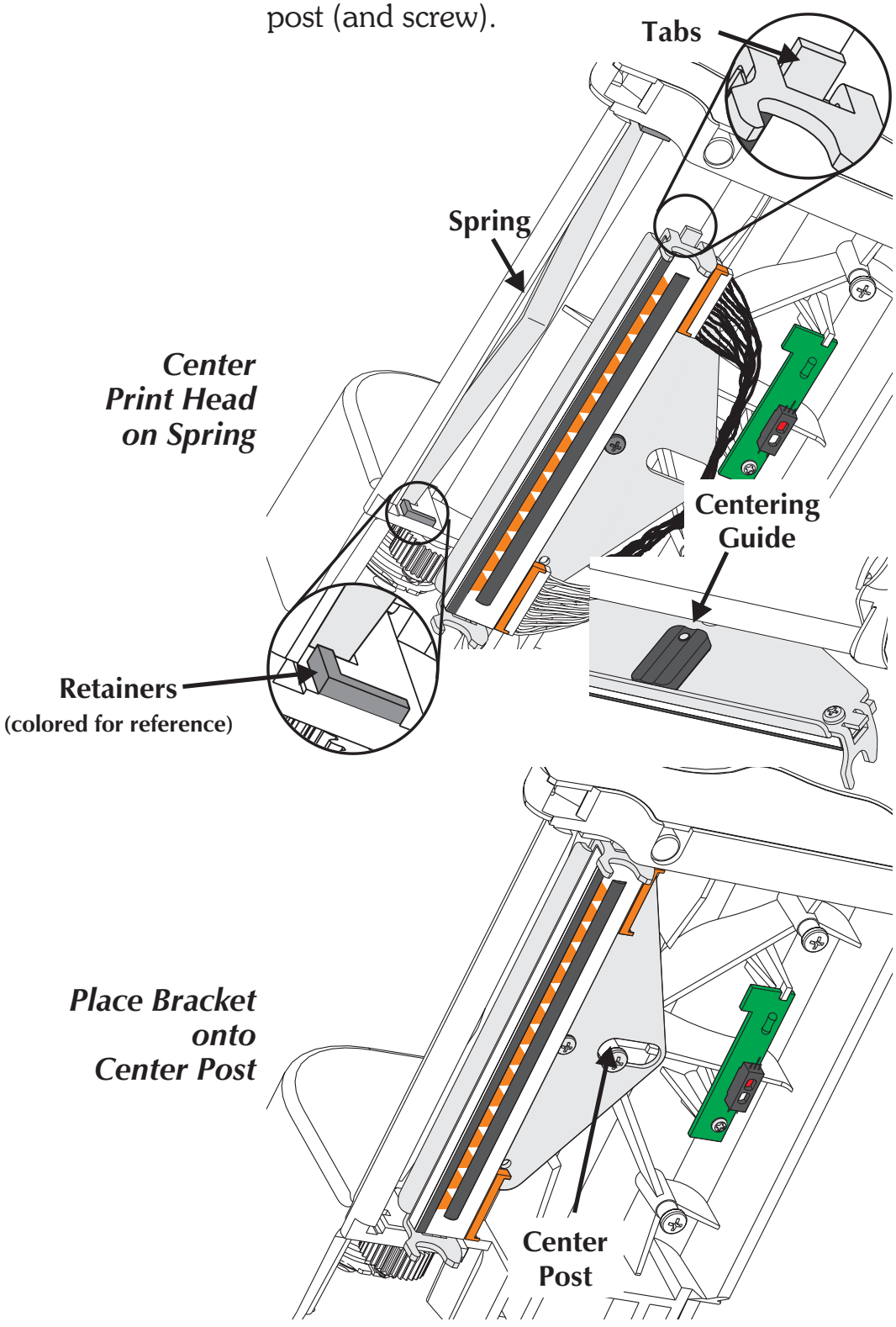
Disconnect Ground Wire



Step 6 Reconnect the new print head and bracket assembly to the ground wire.

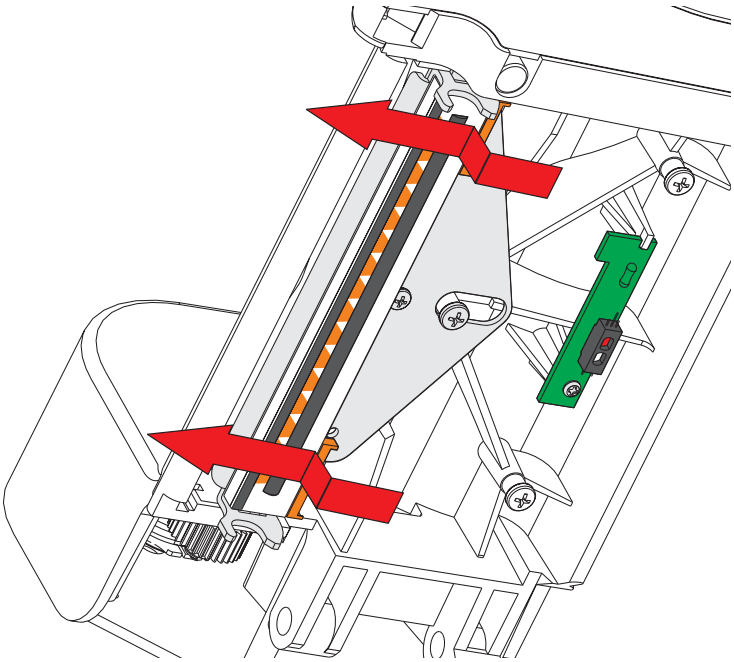
Step 7 Reconnect the print head cable to the print head. The connectors are keyed to go together one way. Do not force the connectors. The connector with the black wires goes on the outside and the connector with the white wires goes on the inside toward the center panel of the printer.

Step 8 Align the center of the print head bracket with the center (V) of the print head spring. Push the bracket's center slot onto the shroud's center post (and screw).



Step 9 While pressing up on the print head, slide the bracket's tabs over the upper print mechanism's print head retainer lip. Even upward pressure on both sides of the print head is required to clear the front edge of the retainer lip. Slide the bracket to the front of printer.

Press Print Head Tabs over the top of the Bracket Retainers



Step 10 Dress the print head cable away from the print head bracket and replace the print head shroud. Align the shroud to the three (3) posts (and screws) and slide to the back. The shroud will snap in place.

Step 11 **Clean the print head.** See page 26 for more details.

Appendix D
Cover Removal

The following section describes the cover removal for service.

Cover Removal Procedure

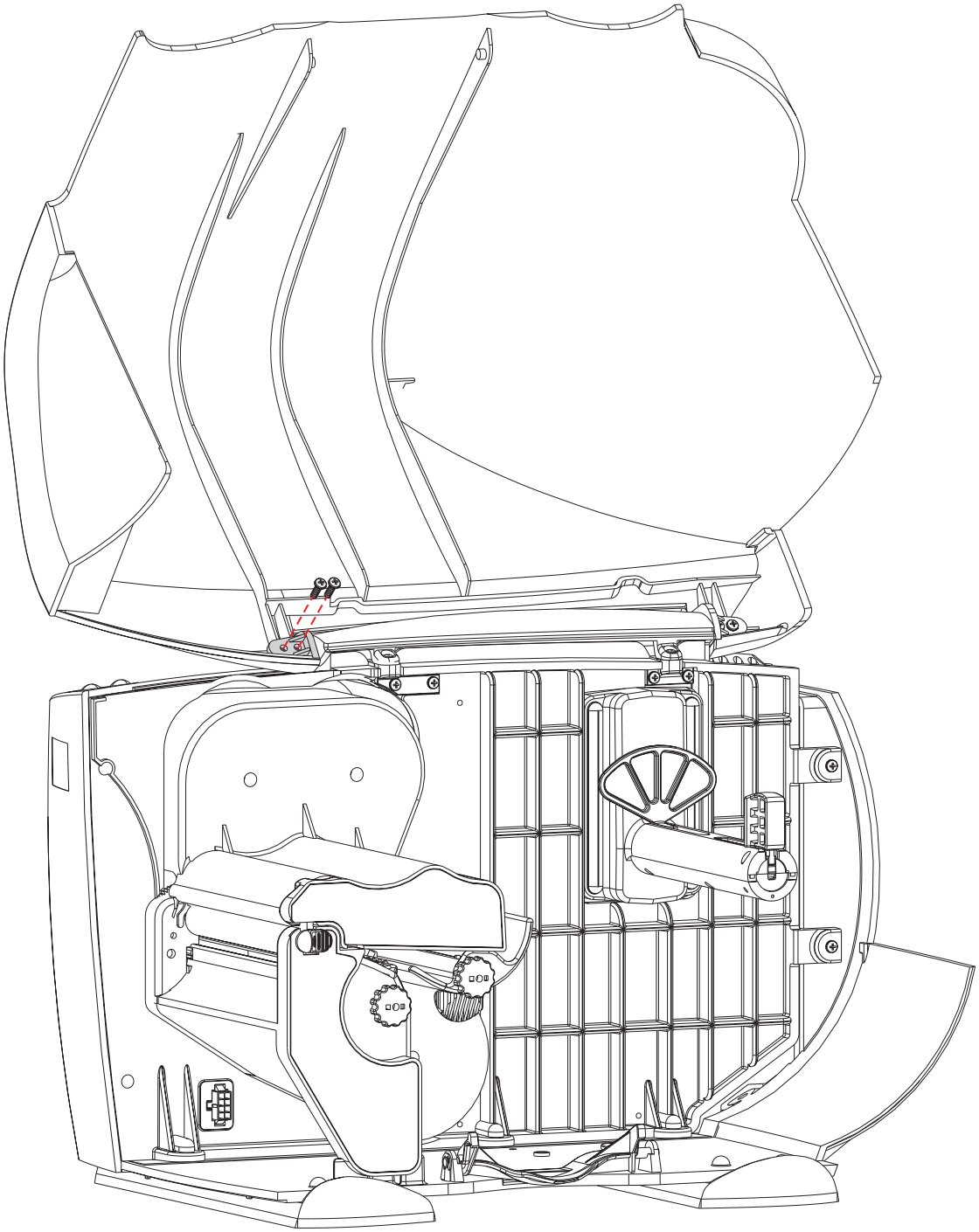
This procedure is intended for the field service engineer or technician.

The printer's cover is not designed to be removed repeatedly.

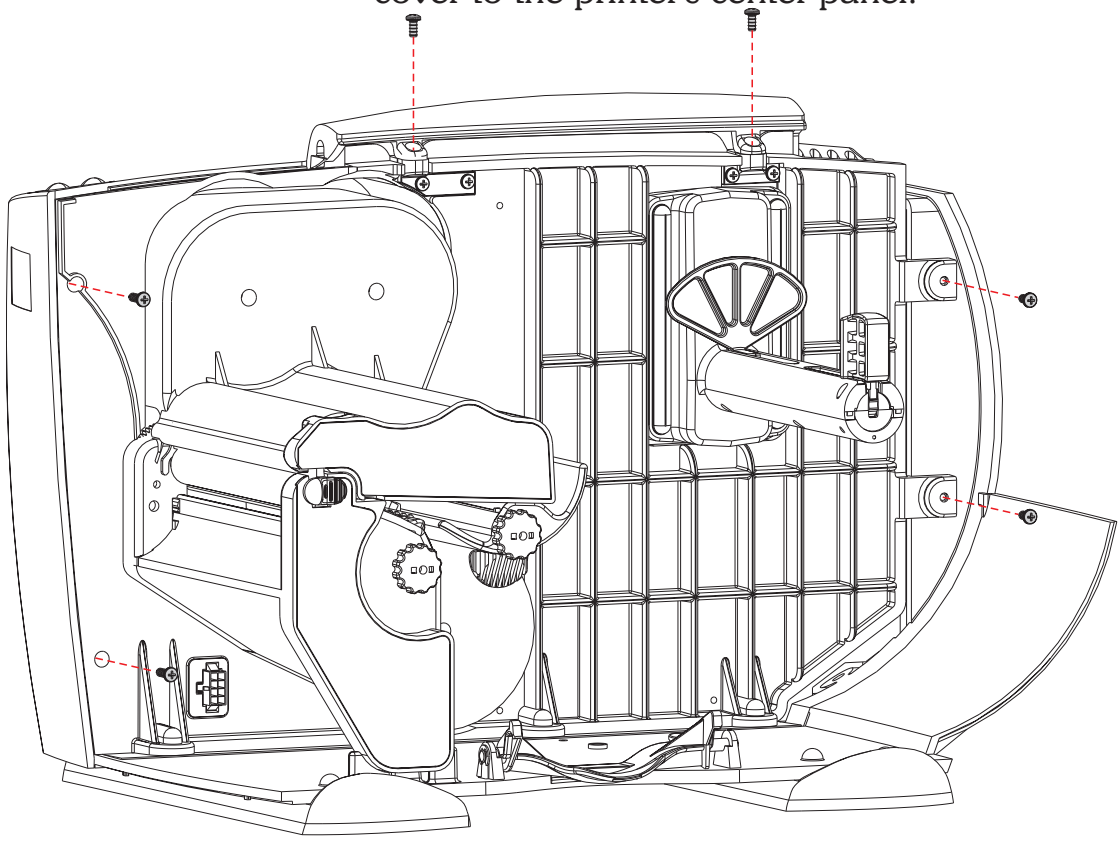
Prepare a static-safe work area before opening the printer for repair. The area must include a properly grounded conductive cushioned mat to hold the printer and a conductive wrist strap for the technician. ESD protective devices are available from most electronic supply stores or by contacting 3M corporation at (800) 328-1368.

Shock Hazard
Always turn off the printer before performing any maintenance or repair operations. Wait for the indicator light to be dark, then unplug the power cord.

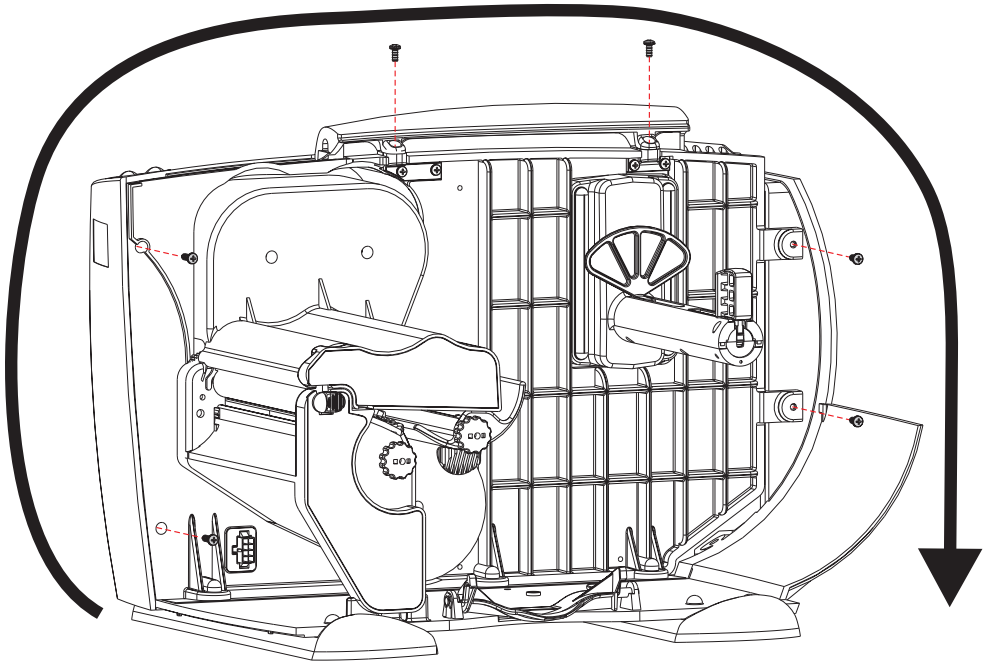
Step 1 Remove the top cover (door). Remove the two screws on the cover's front hinge bracket. Swing the top cover off the back hinge bracket and set it aside.



Step 2 Remove the six screws retaining the left side cover to the printer's center panel.



Step 3 Pry the cover off with your hands. Do not use tools. Start at the front corner working around to the top and then to the rear of the printer.



Step 4 Slip the left cover and I/O plate off the main PCBA in the rear of the printer.

Set the cover down next to the left side of the printer. Note that the cover is attached to the main PCBA by the control panel's cable.

Replacing the Cover Reverse the cover removal process. Do not over tighten the screws. Do not cross-thread the pre-existing threads made during the original assembly of the printer. Use a torque setting of 4.7 ±1 inch pounds (0,531 ± 0,113 Nm).